PB82-123472

Water Resources Data for Texas, Water Year 1980 Volume 3: Colorado River Basin, Lavaca River Basin, Guadalupe River Basin, Neces River Basin Rio Grande Basin, and Intervening Coastal Basins

(U.S.) Geological Survey
Austin, TX

Aug 81

U.S. Department of Commerce
National Technical Information Service
NTIS

PB82-123472

Water Resources Data for Texas

Volume 3. Colorado River Basin, Lavaca River Basin, Guadalupe River Basin, Neces River Basin, Rio Grande Basin, and Intervening Coastal Basins

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TX-80-3

WATER YEAR 1980

Prepared in cooperation with the State of Texas and with other agencies

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INFORMATION SERVICE
U.S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA 22161

CALENDAR FOR WATER YEAR 1980

1979

OCTOBER

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U.S. DEPARTMENT OF THE INTERIOR
March 3, 1849

Water Resources Data for Texas

Volume 3. Colorado River Basin, Lavaca River Basin, Guadalupe River Basin, Neces River Basin, Rio Grande Basin, and Intervening Coastal Basins

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TX-80-3

WATER YEAR 1980

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Surface-water data for the 1980 water year for Texas are presented in three volumes, appropriately identified as to content by river basins. Data in each volume consist of records of stage, discharge, and water quality of streams and canals; and stage, contents, and water quality of lakes and reservoirs. Also included are crest-stage and flood-hydrograph partial-record stations, reconnaissance partial-record stations, and low-flow partial-record stations. Additional water data were collected at various sites, not part of the systematic data collection program, and are published as miscellaneous measurements. Records for a few pertinent stations in bordering States are also included. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in Texas.

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GEOLOGICAL SURVEY

Dallas L. Peck, Director

For additional information write to
District Chief, Water Resources Division
300 East 8th Street
Austin, Texas 78701

1981

Preface

This report was prepared by the U.S. Geological Survey in cooperation with the State of Texas and other agencies by personnel of the Texas district of the Water Resources Division under the supervision of C. W. Boning, District Chief, and Alfred Clebsch, Jr., Regional Hydrologist, Central Region.

This report is one of a series issued by State under the general direction of Phil Cohen, Chief Hydrologist, and R. J. Dingman, Assistant Chief Hydrologist for Scientific Publications and Data Management.

Data for Texas are in three volumes as follows:

Volume 1.	Arkansas River basin, Red River basin, Sabine River basin, Neches River basin, Trinity River basin, and intervening and adjacent Coastal basins
Volume 2.	San Jacinto River basin, Brazos River basin, San Bernard River basin, and intervening Coastal basins
Volume 3.	Colorado River basin, Lavaca River basin, Guadalupe River basin, Nueces River basin, Rio Grande basin, and intervening Coastal basins

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WATER RESOURCES DATA FOR TEXAS, 1980

VOLUME 3

COLORADO RIVER BASIN, LAVACA RIVER BASIN, GUADALUPE RIVER BASIN, NUECES RIVER BASIN, RIO GRANDE BASIN, AND INTERVENING COASTAL BASINS

INTRODUCTION

Surface-water data for Texas for the 1980 water year are presented in three volumes, appropriately identified by river basins. Data in each each volume consist of records of stage, discharge, and water quality of streams and canals; and stage, contents, and water quality of lakes and reservoirs. Records for a few pertinent stations in bordering states are also included. These data represent that part of the National Water Data System operated by the U.S. Geological Survey in cooperation with State and Federal agencies in Texas.

Records of discharge (or stage) of streams and contents (or stage) of lakes and reservoirs were first published in a series of Geological Survey Water-Supply Papers entitled, "Surface Water Supply of the United States." Through water year 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperature, and suspended sediment were published from 1941 to 1971 in an annual series of water-supply papers entitled, "Quality of Surface Waters of the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from Branch of Distribution, U.S. Geological Survey, 1200 South Eads Street, Arlington, Virginia 22202.

For water years 1961 through 1974, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records for water years 1964 through 1974 were similarly released either in separate reports or in conjunction with streamflow records. Beginning with the 1975 water year, water data for streamflow and water quality are published as an official Survey report on a State-boundary basis. These official Survey reports carry an identification number consisting of the two letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report TX-80-3." Water-data reports are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161.

COOPERATION

Organizations that assisted in the collection of data in this report through joint funding agreements with the Geological Survey in 1980 are:

Texas Department of Water Resources, H. D. Davis, Executive Director; A. L. Black, Chairman; J. H. Garrett, Vice-Chairman; M. T. Potts, G. E. Roney, G. W. McCleskey, and W. O. Bankston, Members.

Pecos River Commission, Horace Babcock, Federal Representative and Chairman; L. A. Vick, Commissioner for Texas, and J. L. Cathey, Commissioner for New Mexico.

Sabine River Compact Administration, Lamar Carroon, Federal Representative and Chairman; R. J. Palmer and G. R. Dyson for Louisiana; and J. M. Syler and Nelson Davis for Texas.

City of Austin, John German, Jr., Director, Engineering Department.

City of Dallas, Monroe McCorkle, Director of Public Works.

City of Garland, J. G. Driskoll, City Engineer.

City of Houston, J. A. Schindewolf, Director of Public Works.

City of Mesquite, G. E. Dowling, City Engineer.

Assistance in the form of funds or services was furnished by the following Federal agencies:

Corps of Engineers, U.S. Army.

Environmental Protection Agency.

Federal Emergency Management Agency.

International Boundary and Water Commission, United States and Mexico, U.S. Section.

National Park Service.

Soil Conservation Service, Department of Agriculture.

U.S. Water and Power Resources Service.

Assistance in the form of funds or services was rendered by the following organizations through the Texas Department of Water Resources:

> The cities of Abilene, Alice, Arlington, Austin, Brady, Cleburne, Clyde, Corpus Christi, Dallas, El Paso, Gainesville, Graham, Houston, Nacogdoches, San Angelo, San Antonio, and Wichita Falls; Athens Municipal Water Authority; Bexar, Medina, and Atascosa Counties Water Control and Improvement District No. 1; Bistone Municipal Water Supply District; Brazos River Authority; Colorado River Municipal Water District; Dallas County; Dallas Power and Light Company; Dow Chemical Company; Edwards Underground Water District; Franklin County Water District; Freese and Nichols, Inc.; Greenbelt Municipal and Industrial Water Authority; Guadalupe-Blanco River Authority; Harris County Flood Control District; Harris-Galveston Coastal Subsidence District; Lavaca-Navidad River Authority; Lone Star Steel Company; Lower Colorado River Authority; Lower Neches Valley Authority; MacKenzie Municipal Water Authority; North Central Texas Municipal Water Authority; Northeast Texas Municipal Water District; Nueces River Authority; Orange County; Palo Pinto County Municipal Water District; Red Bluff Water Power Control District; Reeves County Water Improvement District No. 1; Sabine River Authority of Texas; San Antonio City Public Service Board; San Antonio City Water Board; San Antonio River Authority; San Jacinto River Authority; Tarrant County Water Control and Improvement District No. 1; Texas Electric Service Company; Texas Utilities Services, Inc.; The Woodlands Development Corporation; Titus County Fresh Water Supply District No. 1; Tom Green County Water Control and Improvement District No. 1; Trinity River Authority; Upper Guadalupe River Authority; Upper Neches River Municipal Water Authority; Upper Trinity Basin Water Quality Compact; West Central Texas Municipal Water District; Wichita County Water Improvement District No. 2; and Wood County.

HYDROLOGIC CONDITIONS

Large variations in rainfall and runoff characterize the usual hydrologic conditions in Texas. In the east, streams are usually deep with wide alluvial flood plains, and streamflow is generally perennial. Normal annual rainfall exceeds 50 inches in the extreme east and annual runoff may average as much as 15 inches. In the west, streams are generally of the arroyo type and streamflow is highly ephemeral. Normal annual rainfall is less than 8 inches in the extreme west and annual runoff averages less than 0.1 inch in many areas.

During the 1980 water year, runoff for index station North Bosque River near Clifton, located in the central part of the State was in the deficient range (within the lowest 25 percent of record), with a mean discharge of only 19 percent of the long-term median. The other three index stations, Neches River near Rockland, located in east-central Texas, Guadalupe River near Spring Branch, located in south-central Texas, and North Concho River near Carlsbad, located in west Texas, were in the normal runoff range for the year. Figure 1 on page 28 shows a comparison of monthly and annual mean discharges for the index stations. Conservation storage in a selected group of 63 reservoirs, with a combined conservation capacity of 30,252,000 acre-feet, decreased from 86 percent of capacity in September 1979 to 75 percent of capacity in September 1980. Records from the 63 reservoirs show that 52 reservoirs decreased in contents, 10 increased, and one remained the same.

At the beginning of the 1980 water year, streamflow was in the deficient range in the northeastern part of the State, excessive (within the highest 25 percent of record) along the Gulf coast, and near normal in the remainder of the State. At the end of the first quarter, accumulated rainfall amounts were below normal across most of the State, with deficient runoff conditions existing across the entire northern half of the State. At the end of the second quarter, conditions were basically unchanged, with deficient runoff occurring in the northern half of the State and near-normal conditions existing in the southern half.

By late June, a combination of below-normal rainfall and record-breaking high temperatures brought moderate drought conditions to all of north and east Texas. At the end of July, drought conditions had further intensified in north and east Texas and below-normal runoff conditions existed across the entire State, except for the Guadalupe River basin in south-central Texas where conditions were normal.

Runoff conditions remained unchanged until mid-August when Hurricane Allen produced drought-breaking rainfall along its westward path across south and southwest Texas. A further improvement in flow conditions occurred in early September in the wake of tropical storm Danielle which produced heavy rainfall in the central and west-central parts of the State. At the end of the water year, deficient runoff conditions continued in a large portion of east-central Texas, above-normal conditions existed in south-central and west Texas, and normal conditions existed in the remainder of the state.

DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also the table for converting English units to International System (SI) on the inside of the back cover.

During water year 1978, revisions were made in the terminology used to define 143 of the water-quality parameter codes that have been used by the Geological Survey in its publication of water-quality data in its WATSTORE data system. These revisions were made to achieve consistency in terminology. They do not represent a change in the way the codes have been used in the part or in the association of specific code numbers with identified analytical procedures.

Use of the new terminology began with data for the 1978 water year, and therefore, it first appears in that publication. Definitions on which the terminology is based are included in the "Definitions" sections of this report.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet, about 326,000 gallons, or 1,233 cubic meters.

Algae are mostly aquatic, single-celled, colonial, or multi-celled plants, containing chlorophyll and lacking roots, stems, and leaves.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

> Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as the organisms which produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35°C ± 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL (milliliters) of sample.
>
> Fecal coliform bacteria are bacteria that are present in the intestines or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°C ± 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C ± 1.0°C on M-enterrococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in g/m^3 (grams per cubic meter), and periphyton and benthic organisms in g/m^2 (grams per square meter).

Dry mass refers to the mass of residue present after drying in an oven at 60°C for zooplankton and 105°C for periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass, and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

Wet mass is the mass of living matter plus contained water.

Biomass pigment ratio is the ratio of organic mass in mg/m^2 (milligrams per square meter) to the mass of chlorophyll a, in mg/m^2.

Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organisms which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multi-celled and are counted according to the number of contained cells per sample, usually mL or L (liters).

Cfs-day is the volume of water represented by flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-ft, about 646,000 gallons or 2,447 cubic meters.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water, and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common pigments in plants.

Color unit is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Contents is the volume of water in a reservoir or lake, and unless otherwise indicated is computed on the basis of a level pool. The computation does not include bank storage.

Control designates a feature downstream from a gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Cubic foot per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Cubic foor per second (FT^3/S, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second. This rate is equivalent to approximately 7.48 gallons per second, 448.8 gallons per minute, or 0.02832 cubic meters per second.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment), that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Dissolved refers to that material in a representative water sample which passes through a 0.45 µm membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Diversity index is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = -\sum_{i=1}^{s} \frac{n_i}{n} \log_2 \frac{n_i}{n}$$

where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Diversity index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at a specified location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the stream above the specified location. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gage height (G.HT.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an 8-digit number.

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

Micrograms per gram (µg/g) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

Micrograms per liter (UG/L, µg/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L, and is based on the mass of sediment per liter of water-sediment mixture.

National Geodetic Vertical Datum of 1929 (NGVD) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

ND is used in some of the tables of pesticide data as an abbreviation for "Not Detected." Analyses in which this term is reported were made by the U.S. Environmental Protection Agency laboratory in Bay Saint Louis, Mississippi.

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meters (m^2), acres, or hectares. Periphyton benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliters (mL) or liters (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Partial-record station is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimeters (mm), of suspended sediment or bed material determined either by sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Clasification	Size (mm)	Method of analysis
Clay.........	0.00024 - 0.004	Sedimentation
Silt.........	.004 - .062	Do.
Sand.........	.062 - 2.0	Sedimentation or sieve
Gravel.......	2.0 - 64.0	Sieve

The particle-size ditribution given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native-water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass, or volume.

Periphyton is the assemblage of microorganisms attached to and growing upon solid surfaces. While primarily consisting of algae, the assemblage may include bacteria, fungi, protozoa, rotifers, and other small organisms.

Pesticides are chemical compounds used to control undesirable plants and animals. Major categories of pesticides include insecticides and herbicides, which control insects and plants respectively, and are the two categories reported.

Picocurie (PC, pCi) is one trillionth (1×10^{-12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment, and are commonly known as algae.

> Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.
>
> Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells/mL of sample.
>
> Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algal mats of floating "moss" in lakes. Their concentrations are expressed as number of cells/mL of sample.
>
> Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column, and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon baceria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Recoverable from bottom material refers to the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of only readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Runoff in inches (IN, in) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usuage, and quantity and intensity of precipitation.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream, or is the quantity of sediment, as measured by dry weight or volume, that passes a section during a given time. It is computed by multiplying discharge (ft^3/s) times mg/L times 0.0027.

Suspended-sediment load is quantity of suspended sediment passing a section in a specified period.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry weight or volume, that passes a section during a given time.

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Sodium adsorption ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions with soil and is an index of sodium or alkali hazard to the soil. This ratio should be known especially for water used for irrigation.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in micromhos per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content in the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and volume of water per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lives.

> Natural substrates refers to any naturally occurring emersed or submersed solid surface, such as rock or tree, upon which an organism lived.
>
> Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multi-plate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection.

Suspended, recoverable refers to the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45 µm membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results. Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total refers to the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 µm membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total." Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total numbers of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

Tons per day is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour day.

Total refers to the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of water-suspended sediment mixture and that the analytical method determines all of the constituent in the sample.)

Total in bottom material refers to the total amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

Total load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the mean discharge (ft^3/s), times the mg/L of the constituent, times the factor 0.0027, times the number of days.

Total, recoverable refers to the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, Hexagenia limbata is the following:

Kingdom	Animal
Phylum	Arthropoda
Class	Insecta
Order	Ephemeroptera
Family	Ephemeridae
Genus	Hexageria
Species	Hexagenia limbata

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WDR is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual basic-data reports.

WRD is used as an abbreviation for "Water Resources Data" in the REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1975.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary that enters between two main-stream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is situated with respect to the stream to which it is immediately tributary is indicated by an indention in a list of stations in the front of the report. Each indention represents one rank. This downstream order and system of indention show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

As an added means of identification, each hydrologic station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The station numbering system is not used at miscellaneous sites where only random water-quality samples or discharge measurements are taken. The complete number for each station consists of eight digits, such as 08123800. The first two digits, 08 or 07, identify the river basin as previously published in the series of water-supply papers on the Surface Water Supply of the United States. The digits 07 indicate the Lower Mississippi River basin, and the digits 08 indicate the Western Gulf of Mexico Basins. The remaining six digits of the station number are sequential in downstream order.

All records for a drainage basin that extends across State boundaries can be arranged in downstream order by assembling the pages from the appropriate State reports by station number.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins that have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

National stream-quality accounting network (NASQAN) is a data collection network designed by the Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality.

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity.

Radiochemical program is a network of regularly sampled gaging stations where additional samples are collected monthly or twice a year (at high and low flow) to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

The basic data collected at gaging stations consist of (1) records of stage; (2) measurements of discharge of streams and canals; and (3) stage, surface area, and contents of lakes and reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement basic data in determining the daily flow or volume of water in storage. Records of stage are obtained from direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at 5-, 15-, 30-, or 60-minute intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in standard textbooks, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6. Surface areas of lakes or reservoirs are determined from instrument surveys using standard methods. The configuration of the reservoir bottom is often determined by sounding at many points.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening mesurements, computation of flow over dams or weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables; monthly and yearly mean discharges are computed from the daily values. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors (based on individual discharge measurements and notes by the hydrologists or observers) are used in applying the gage heights to the rating tables.

At some stream-gaging stations, the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations, the stage-discharge relation is affected by changing stage; at these stations, the rate of change in stage is used as a factor in computing discharge.

For a lake- or reservoir-gaging station, a capacity table giving the contents for any stage is prepared from a stage-area relation curve defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly changes in contents are computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys, the computed contents may be increasingly in error due to the gradual accumulation of sediment. However, the change in contents is not affected to the same extent.

At some gaging stations, there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. For such periods, the daily discharges are estimated on the basis of recorded range in stage, adjoining good record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Daily contents may be estimated on the basis of operator's log, adjoining good record, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of daily and monthly values. For gaging stations on streams or canals, a table showing the daily, monthly, and yearly discharge is given. For a gaging station on a reservoir, a table showing the daily contents is given. Tables of daily or maximum and minimum daily gage heights are included for some gaging stations. Records are published for the water year, which begins on October 1 and ends on September 30. A calendar for the current water year is shown on the inside of the front cover to facilitate finding the day of the week for any date.

The description of the gaging stations, except those partial-record stations published in tabular form in the back of the report, gives the location, drainage area, period of record, type and history of gages, average discharge, extremes of discharge or contents, general remarks, and notations of revisions of previously published records. The location of the gaging stations and the drainage areas are obtained from the most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies (U.S. Water Resources Council, 1968). Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records for some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use, the datum of the present gage referred to National Geodetic Vertical Datum, and a condenced history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." National Geodetic Vertical Datum is explained in "DEFINITIONS OF TERMS" on page 9.

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow at the gaging station is given under "REMARKS." For reservoir stations, information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the statistic to have little significance. Under "EXTREMES" are given first, the extremes for the period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the maximum stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge, it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations additional peak discharges are listed under EXTREMES FOR THE CURRENT YEAR; if they are all independent peaks above a selected base. The time of occurrence of the peaks and corresponding gage heights are also listed. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in separate paragraph following the table of peaks.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily mean discharges, respectively, for the month. Discharge for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are generally omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the significant statistics for the calendar and water years.

Footnotes to the table of daily discharge are introduced by the word "NOTE." Footnotes are used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-relation, or of any other unusual condition at the gage site are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables in the back of the report. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual, maximum stage and (or) discharge at crest-stage stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. Occasionally, a series of discharge measurements are made and samples collected within a short time period to investigate the seepage and (or) pollutant gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements and analyses are also given in special tables following the tables of partial-record stations.

Accuracy of field data and computed results

The accuracy of discharge data depends primarily on (1) the stability of the stage-discharge relation, or if the control is unstable, the frequency of discharge measurements; and (2) the accuracy of observations of stage, measurements of discharge, and interpretation of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good", within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 cfs; to tenths between 1.0 and 10 cfs; to whole numbers between 10 and

1,000 cfs; and to 3 significant figures above 1,000 cfs. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff because of the effects of diversion, municipal and industrial effluents consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, values for cubic feet per second per square mile and runoff in inches are not published unless satisfactory adjustments can be made. Adjustments for evaporation from a reservoir are not included in the published changes in reservoir contents, unless it is so stated.

Other data available

Information of a more detailed nature than that published for most of the gaging stations, such as observations of water temperatures, discharge measurements, gage-height records, and rating tables, is on file in the Texas District Office in Austin. Most gaging-station records are available in computer-usable form, and many statistical analyses have been made.

Records of discharge collected by agencies other than the Geological Survey

The International Boundary and Water Commission, United States and Mexico, operates all gaging stations on the Rio Grande and near the mouth of its principal tributaries at and below El Paso, Texas. Records collected at these stations are published in annual bulletins by the Commission and may be obtained from the International Boundary and Water Commission, United States Section, P. O. Box 20003, El Paso, Texas 79998.

EXPLANATION OF SURFACE-WATER QUALITY RECORDS

Collection and examination of data

Surface-water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, pH, dissolved oxygen, water temperature, sediment discharge, etc.); extremes for the period of daily record; extremes for the current year; and general remarks.

Water analysis

Most methods for collecting and analyzing water samples are described in U.S. Geological Survey Techniques of Water Resources Investigations listed below.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating loads.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between the reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is probably the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and biocarbonate.

At stream-gaging stations where daily samples are obtained, tables are included to show monthly and annual weighted averages of specific conductance; weighted average concentrations of dissolved solids, chloride, sulfate, hardness; and loads of dissolved solids, chloride, and sulfate. The weighted averages have been computed by using the daily records of specific conductance and developing regression relationships between each water-quality parameter and specific conductance.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean value for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the district office.

At some stations where continuous or daily records of specific conductance are obtained, concentrations of selected chemical constituents have been computed from regression relationships between specific conductance and the chemical constituents. The weighted average, monthly and annual concentrations and/or loads of these constituents may be published in this report. For each station where this has been done, a statement so indicating has been included in the remarks section of the station description.

Water temperature

Water temperatures are measured at most of the water-quality stations. Water temperatures are also taken at time of discharge measurements at gaging stations. At sites at which daily samples are taken, the water temperature is taken about the same time each day. Large streams have a small diurnal temperature change; but small, shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams and reservoirs may be affected by waste-heat discharges.

At stations where digital recording thermographs are present, the records published consist of maximum, minimum, and mean temperatures for each day and the monthly averages.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross section.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected twice daily or, in some instances, hourly. The published values of sediment discharges for days of rapidly changing flow or concentrations were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days in which the published value of sediment discharge differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water-sediment discharge relations, sediment concentrations observed immediately before and after periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow and in estimating long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included.

PUBLICATIONS OF TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Most methods used by the U.S. Geological Survey have been published in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 1200 South Eads Street, Arlington, VA 22202 (authorized agent of the Superintendent of Documents, Government Printing Office).

NOTE: When ordering any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations".

1-D1. *Water temperature-influential factors, field measurements, and data presentation,* by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 p.

3-A1. *General field and office procedures for indirect measurements,* by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 p.

3-A2. *Measurement of peak discharge by the slope-area methods,* by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 p.

3-A3. *Measurement of peak discharge at culverts by indirect methods,* by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 p.

3-A4. *Measurement of peak discharge at width contractions by indirect methods,* by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 4 p.

3-A5. *Measurement of peak discharge at dams by indirect methods,* by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 p.

3-A6. *General procedure for gaging streams,* by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 p.

3-A7. *Stage measurements at gaging stations,* by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 p.

3-A8. *Discharge measurements at gaging stations,* by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 p.

3-A11. *Measurement of discharge by moving-boat method,* by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 p.

3-C1. *Fluvial sediment concepts,* by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 p.

3-C2. *Field methods for measurement of fluvial sediment,* by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 p.

3-C3. *Computation of fluvial-sediment discharge,* by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 p.

4-A1. *Some statistical tools in hydrology,* by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 p.

4-A2. *Frequency curves,* by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 p.

4-B1. *Low-flow investigations,* by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 p.

4-B2. *Storage analyses for water supply,* by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 p.

4-B3. *Regional analyses of streamflow characteristics,* by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 p.

5-A1. *Methods for determination of inorganic substances in water and fluvial sediments,* by M. W. Skougstad and others: USGS--TWRI Book 5, Chapter A1. 1979. 626 p.

5-A2. *Determination of minor elements in water by emission spectroscopy,* by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 p.

5-A3. *Methods for analysis of organic substances in water,* by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 p.

5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples,* edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 p.

5-A5. *Methods for determination of radioactive substances in water and fluvial sediments,* by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 p.

5-C1. *Laboratory theory and methods for sediment analysis,* by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 p.

8-B2. *Calibration and maintenance of vertical-axis type current meters,* by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 p.

08118000 LAKE J. B. THOMAS NEAR VINCENT, TX

LOCATION.--Lat 32°35'09", long 101°12'18", Borden County, Hydrologic Unit 12080002, at Big Spring pump station on south side of lake, 4.0 mi (6.4 km) upstream from dam on Colorado River, 7.3 mi (11.7 km) north of Vincent, 12.5 mi (20.1 km) west of Ira, and at mile 841.0 (1,353.2 km).

DRAINAGE AREA.--3,524 mi² (9,127 km²), of which 2,590 mi² (6,710 km²) probably is noncontributing. Drainage area includes 426 mi² (1,103 km²) above Bull Creek diversion dam, of which 32 mi² (83 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1953 to current year.

GAGE.--Water-stage recorder and nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929. Nov. 4, 1953, to Feb. 7, 1955, Colorado River Municipal Water District nonrecording gage located 4.0 mi (6.4 km) downstream at same datum.

REMARKS.--The lake is formed by a rolled earthfill dam, 14,500 ft (4,420 m) long. Storage began in July 1952 and the dam was completed in September 1952. There was no appreciable storage prior to July 1953. The capacity curve is based on surveys made in 1948 and 1950. There are two uncontrolled emergency spillways, both cut through natural ground and located as follows: The first is a 500-foot (150 m) wide cut located at the left end of dam, and the second cut is 1,600 ft (488 m) wide located at the right end of dam. These spillways are designed to discharge 161,000 ft³/s (4,560 m³/s) at an elevation of 2,275.0 ft (693.42 m). An uncontrolled rectangular concrete drop inlet, 38.0 by 53.0 ft (11.6 by 16.2 m) at the crest, discharges into two 10.0-foot (3.0 m) concrete conduits. In addition, there is an outlet that can release water through a 24-inch (610 mm) gate into a 30-inch (762 mm) concrete pipe. The dam was built by the Colorado River Municipal Water District to impound water for municipal and industrial supply for the cities of Big Spring, Odessa, and Snyder. A diversion dam on Bull Creek diverts water through a 13,000-foot-long (3,960 m) gravity canal into Lake J. B. Thomas. These diversions began in November 1953. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam..	2,280.0	-
Crest of right spillway (south)......................................	2,267.0	283,600
Crest of left spillway (north).......................................	2,264.0	255,000
Crest of drop inlet (top of conservation pool).......................	2,258.0	203,600
Lowest gated outlet (invert)...	2,200.0	1,300

COOPERATION.--Area and capacity curves and record of diversions were furnished by the Colorado River Municipal Water District. Daily elevation record was furnished by the Colorado River Municipal Water District and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 218,600 acre-ft (270 hm³) Sept. 8, 1962, elevation, 2,259.85 ft (688.802 m); minimum since first appreciable storage, 4,960 acre-ft (6.12 hm³) May 28, 1971, elevation, 2,206.43 ft (672.520 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 64,660 acre-ft (79.7 hm³) Sept. 30, elevation, 2,233.05 ft (680.634 m); minimum, 11,710 acre-ft (14.4 hm³) May 14, elevation, 2,212.06 ft (674.236 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

2,212.0	11,620	2,224.0	36,480
2,218.0	22,300	2,234.0	68,150

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21410	19030	17640	17020	16230	15510	14030	12510	28630	30160	27010	24340
2	21350	18960	17610	16990	16200	15470	13970	12420	28490	30110	26870	24250
3	21200	18880	17570	16950	16200	15440	13930	12390	28440	29910	26780	25640
4	21080	18820	17530	16950	16200	15400	13900	12350	28300	29870	26640	25800
5	20960	18730	17500	16910	16160	15300	13830	12290	28120	29820	26420	25710
6	20880	18630	17430	16910	16160	15260	13800	12250	27930	29770	26260	25660
7	20760	18650	17390	16880	16130	15230	13770	12230	27750	29670	26260	25570
8	20680	18730	17350	16840	16130	15200	13770	12230	27560	29430	26150	25750
9	20590	18650	17320	16800	16090	15160	13770	12110	27430	29380	26090	25710
10	20470	18610	17280	16770	16090	15160	13740	12050	27470	29310	25970	25660
11	20450	18530	17240	16730	16130	15140	13740	11990	28210	29190	25970	25750
12	20350	18490	17240	16690	16090	15140	13740	11930	28490	29090	26020	27240
13	20270	18460	17320	16660	16060	15040	13700	11860	28440	28900	25970	27430
14	20190	18420	17320	16620	16010	14950	13350	11710	28950	28860	25930	27330
15	20120	18340	17320	16580	16010	14870	13280	13570	28810	28670	25840	27290
16	20040	18300	17280	16550	15970	14780	13180	25310	28770	28530	25750	27240
17	20000	18270	17240	16510	15960	14750	13120	28490	28580	28490	25660	27100
18	19960	18230	17240	16510	15960	14700	13060	28560	28490	28300	25570	27060
19	19920	18190	17210	16480	15920	14700	13010	28580	28440	28260	25490	26960
20	19880	18160	17170	16480	15850	14650	12970	28560	28300	27980	25440	26870
21	19810	18160	17130	16440	15780	14570	12940	28490	28160	27930	25350	26780
22	19690	18070	17060	16440	15780	14520	12910	29240	28160	27840	25260	26710
23	19610	17970	17060	16410	15750	14450	12910	29190	30830	27800	25170	26850
24	19500	17880	17240	16410	15710	14370	12910	29190	30970	27750	25090	27150
25	19400	17830	17210	16370	15680	14320	12870	29090	30880	27700	25000	27100
26	19310	17790	17170	16340	15650	14290	12840	29020	30830	27610	24910	28670
27	19270	17790	17130	16340	15610	14290	12750	28950	30730	27520	24820	33570
28	19230	17750	17100	16300	15580	14260	12630	28860	30640	27380	24690	39470
29	19150	17720	17100	16300	15540	14230	12570	28810	30590	27290	24640	56310
30	19110	17680	17060	16270	---	14190	12540	28720	30540	27190	24550	64660
31	19070	---	17060	16230	---	14130	---	28720	---	27100	24460	---
MAX	21410	19030	17640	17020	16230	15510	14030	29240	30970	30160	27010	64660
MIN	19070	17680	17060	16230	15540	14130	12540	11710	27430	27100	24460	24250
(†)	2216.38	2215.64	2215.30	2214.84	2214.44	2213.60	2212.60	2220.90	2221.60	2220.20	2219.02	2233.05
(‡)	-2460	-1390	-620	-830	-690	-1410	-1590	+16180	+1820	-3440	-2640	+40200
(††)	871	702	727	535	552	553	612	745	964	944	740	914

CAL YR 1979 MAX 26550 MIN 7750 ‡ 5510 †† 8150
WTR YR 1980 MAX 64660 MIN 11710 ‡ 43130 †† 8860

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal, industrial, and mining uses.

08118000 LAKE J. B. THOMAS NEAR VINCENT, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
OCT									
30...	1500	666	20.0	160	0	46	12	78	2.6

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
OCT								
30...	8.7	240	0	66	54	.8	6.7	391

08119500 COLORADO RIVER NEAR IRA, TX

LOCATION.--Lat 32°32'18", long 101°03'12", Scurry County, Hydrologic Unit 12080002, on right bank 530 ft (162 m) downstream from bridge on State Highway 350, 3.8 mi (6.1 km) downstream from Bluff Creek, 4 mi (6 km) upstream from Willow Creek, 4.5 mi (7.2 km) southwest of Ira, and at mile 826.3 (1,329.5 km).

DRAINAGE AREA.--3,617 mi² (9,368 km²), of which 2,590 mi² (6,710 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1947 to September 1952 (monthly records only 1950-52), October 1958 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,134.15 ft (650.489 m) National Geodetic Vertical Datum of 1929. Oct. 1-30, 1947, nonrecording gage at site 75 ft (23 m) upstream at same datum.

REMARKS.--Water-discharge records good. Since July 1952, flow has largely been regulated by Lake J. B. Thomas (station 08118000) 11 mi (17.7 km) upstream.

AVERAGE DISCHARGE.--5 years (water years 1948-52) prior to completion of Colorado River Dam, 50.5 ft³/s (1.430 m³/s), 36,590 acre-ft/yr (45.1 hm³/yr); 22 years (water years 1959-80) partially regulated, 10.6 ft³/s (0.300 m³/s), 7,680 acre-ft/yr (9.47 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,500 ft³/s (581 m³/s) July 6, 1948, gage height, 21.35 ft (6.507 m), from rating curve extended above 9,600 ft³/s (272 m³/s) by slope-conveyance method; maximum gage height, 22.84 ft (6.962 m) May 15, 1980 (from shift in rating); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 16, 1913, gage height, 32 ft (9.8 m), was the greatest since at least that date, from information by local resident. Flood in May 1947 reached a stage of 25.1 ft (7.65 m), from floodmark at site of former bridge 269 ft (82 m) upstream from gage.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,630 ft³/s (216 m³/s) May 15 at 1730 hours, gage height, 22.84 ft (6.962 m); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.06	.17	.13	.14	.17	.09	1.9	.02	.00	.00
2	.00	.00	.08	.11	.17	.11	.18	.07	2.2	.01	.00	2.3
3	.00	.00	.12	.08	.18	.13	.16	.04	1.9	.01	.00	.08
4	.00	.00	.08	.08	.19	.14	.18	.03	1.6	.01	.00	.02
5	.00	.00	.08	.09	.19	.14	.14	.06	1.4	.01	.00	.01
6	.00	.00	.08	.09	.17	.14	.14	.07	1.2	.01	.00	.00
7	.00	.88	.06	.07	.24	.14	.11	.15	1.1	.01	.00	15
8	.00	.06	.06	.06	.46	.15	.08	.06	7.9	.01	.00	8.8
9	.00	.04	.06	.07	.57	.17	.12	.06	2.7	.01	.00	51
10	.00	.02	.06	.07	.51	.16	.13	.06	1.7	.01	.00	8.6
11	.00	.01	.79	.07	.55	.18	.15	.01	28	.00	.00	1.5
12	.00	.01	11	.03	.37	.11	.18	.00	16	.00	.00	.94
13	.00	.01	2.6	.06	.32	.14	.11	.00	3.4	.00	.00	.54
14	.00	.01	2.6	.06	.33	.13	.08	.00	1.8	.00	.00	.31
15	.00	.02	1.4	.07	.42	.14	.10	2900	1.3	.00	.00	.22
16	.00	.02	.82	.07	.28	.17	.10	938	.83	.00	.31	.12
17	.00	.03	.48	.06	.27	.15	.09	34	.57	.00	.12	.03
18	.00	.03	.48	.07	.31	.10	.06	20	.42	.00	.02	.02
19	.00	.03	.17	.09	.29	.14	.06	13	.46	.00	.01	.01
20	.00	9.2	.15	.08	.27	.13	.07	9.4	.51	.00	.00	.00
21	.00	.48	.15	.07	.15	.09	.07	9.9	5.3	.00	.00	.00
22	.00	.12	.16	1.5	.25	.13	.07	7.1	2.9	.00	.00	1.1
23	.00	.08	.67	1.2	.19	.13	.07	6.8	.68	.00	.00	68
24	.00	.08	.24	.48	.16	.11	.25	5.5	.42	.00	.00	11
25	.00	.08	.28	.30	.14	.15	.09	4.0	.31	.00	.00	1.7
26	.00	.06	.29	.17	.13	.17	.08	3.3	.12	.00	.00	161
27	.00	.04	.19	.09	.15	.35	.08	3.0	.07	.00	.00	132
28	.00	.06	.29	.13	.17	.29	.07	2.5	.06	.00	.00	1660
29	.00	.06	.13	.10	.25	.22	.07	2.2	.04	.00	.00	1040
30	1.1	.06	.18	.13	---	.19	.04	2.0	.03	.00	.00	46
31	.01	---	.17	.08	---	.17	---	1.9	---	.00	.00	---
TOTAL	1.11	11.49	23.98	5.80	7.81	4.81	3.30	3963.30	86.82	.11	.46	3210.30
MEAN	.036	.38	.77	.19	.27	.16	.11	128	2.89	.004	.015	107
MAX	1.1	9.2	11	1.5	.57	.35	.25	2900	28	.02	.31	1660
MIN	.00	.00	.06	.03	.13	.09	.04	.00	.03	.00	.00	.00
AC-FT	2.2	23	48	12	15	9.5	6.5	7860	172	.2	.9	6370

CAL YR 1979 TOTAL 809.98 MEAN 2.22 MAX 179 MIN .00 AC-FT 1610
WTR YR 1980 TOTAL 7319.29 MEAN 20.0 MAX 2900 MIN .00 AC-FT 14520

08119500 COLORADO RIVER NEAR IRA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--Chemical analyses: November 1958 to September 1970, November 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1958 to September 1970, November 1974 to current year.
WATER TEMPERATURES: November 1958 to September 1970, November 1974 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 87,800 micromhos May 8, 1960; minimum daily, 211 micromhos Sept. 28, 1980
WINTER TEMPERATURES: Maximum daily, 36.0°C July 23, 24, 1969, June 12, 1978; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 60,500 micromhos May 7; minimum daily, 211 micromhos Sept. 28.
WATER TEMPERATURES: Maximum daily, 34.0°C Aug. 18; minimum daily, 0.0°C on several days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	TEMPER-ATURE, WATER (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
NOV									
09...	0845	.04	35600	10.5	2700	2600	670	250	7400
DEC									
19...	1030	.15	20400	3.0	1400	1300	330	140	4600
JAN									
24...	1126	.51	21700	3.0	1500	1300	350	140	4600
FEB									
29...	0800	.25	31400	8.0	2000	1800	440	210	6900
MAR									
06...	1340	.11	33900	18.0	2100	2000	480	220	6200
APR									
16...	1530	.07	50900	30.0	3600	3500	820	380	12000
MAY									
15...	1840	7480	367	11.0	130	27	43	4.5	27
16...	1010	624	777	12.5	170	79	53	9.0	88
SEP									
04...	1030	.02	13400	28.0	930	880	260	69	2700

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
NOV									
09...	62	33	110	0	2000	12000	.3	2.5	22400
DEC									
19...	53	15	170	0	1200	6900	.3	3.7	13300
JAN									
24...	53	16	190	0	1300	6800	.2	1.6	13300
FEB									
29...	68	22	160	0	2000	11000	.5	1.8	20700
MAR									
06...	59	24	150	0	460	11000	.6	2.0	18500
APR									
16...	87	34	130	0	3500	18000	.6	1.8	34800
MAY									
15...	1.0	4.4	120	0	20	50	.4	8.1	217
16...	2.9	5.5	110	0	45	160	.5	7.4	423
SEP									
04...	38	14	70	0	790	4200	.3	4.5	8070

08119500 COLORADO RIVER NEAR IRA, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	1.11	41500	27800	83	14600	44	2600	7.7	*
NOV.	1979	11.49	29800	19500	604	10100	313	1900	60	*
DEC.	1979	23.98	12500	7990	517	4100	264	850	55	*
JAN.	1980	5.80	22800	14700	230	7600	119	1500	24	*
FEB.	1980	7.81	28300	18500	390	9600	201	1900	39	*
MAR.	1980	4.81	38000	25300	329	13300	172	2400	31	*
APR.	1980	3.30	47600	32400	289	17200	153	2900	26	*
MAY	1980	3963.30	1120	694	7430	350	3730	79	849	94
JUNE	1980	86.82	11800	7480	1750	3800	893	810	190	*
JULY	1980	0.11	29800	19500	5.8	10100	3.0	1900	0.6	*
AUG.	1980	0.46	11800	7410	9.2	3800	4.7	820	1.0	*
SEPT	1980	3210.30	757	467	4050	230	2030	54	471	65
TOTAL		7319.29	**	**	15700	**	7930	**	1760	**
WTD. AVG.		20	1270	794	**	400	**	89	**	100

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	36600	27200	27400	35000	41100	60300	[illegible]	28700	---	---
2	---	---	36300	27000	28600	36400	41000	58300	26100	28900	---	10200
3	---	---	36700	28500	27800	31400	41700	56000	25500	29300	---	12300
4	---	---	37200	28700	27900	32600	42300	54400	25700	29500	---	13500
5	---	---	37900	29000	28900	35600	42800	55200	25800	29700	---	13300
6	---	---	38700	28900	28900	34500	44500	58600	27000	29900	---	---
7	---	27500	38000	31300	29200	35100	44400	60500	28400	30300	---	10500
8	---	34100	39400	29600	28700	37800	41800	56800	12500	30600	---	11200
9	---	35200	37900	30900	29700	35700	46500	56800	15200	30800	---	9560
10	---	35800	38900	30700	28700	35900	47100	50000	20600	31300	---	2470
11	---	37000	35500	31800	25300	35900	46400	52600	6500	---	---	5300
12	---	38200	6460	33600	25400	37200	52000	---	5040	---	---	7500
13	---	38900	7500	30800	25500	38100	49200	---	8960	---	---	9110
14	---	40000	8920	33300	25400	37500	45400	---	9610	---	---	11000
15	---	41600	16000	33100	25900	38700	48500	650	11100	---	---	13000
16	---	42800	18800	34100	27500	37600	49600	777	13900	---	12500	14100
17	---	43700	21200	33500	27800	37900	54100	7650	16200	---	8000	15100
18	---	44700	22200	33700	27900	38500	45600	11600	18400	---	18700	15500
19	---	46000	20500	33300	27800	38700	44700	14500	20400	---	21300	15300
20	---	30000	22200	34300	28900	38500	50500	16400	22400	---	---	---
21	---	23300	23100	33600	30900	39200	53800	15900	18500	---	---	---
22	---	25000	23600	15800	30400	40500	55500	17200	17500	---	---	19200
23	---	26500	17500	19500	31600	39800	57500	18400	15900	---	---	4470
24	---	27800	25300	22100	30500	37800	45100	19800	16100	---	---	1570
25	---	29000	26300	22700	30900	40500	54300	20900	19300	---	---	3580
26	---	30300	25900	23300	31300	42000	58000	21600	23000	---	---	1090
27	---	31400	26500	24500	32500	40500	56600	22200	24800	---	---	673
28	---	32800	25600	24700	32100	40100	57600	23000	26900	---	---	211
29	---	35500	26000	26800	32400	40800	56600	23800	27600	---	---	480
30	41500	38400	26500	25800	---	41000	57000	24300	28500	---	---	3250
31	37000	---	27300	28500	---	40000	---	25400	---	---	---	---
MEAN	39300	34800	26800	28700	28800	37800	49000	32300	19400	29900	15100	8590

08119500 COLORADO RIVER NEAR IRA, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	1.0	4.0	.5	.0	6.5	16.0	22.5	26.0	---	---
2	---	---	.0	5.0	.0	.0	15.5	15.5	22.5	26.0	---	24.0
3	---	---	.0	11.0	10.0	.0	9.0	15.5	23.0	24.0	---	27.0
4	---	---	2.0	11.5	4.0	4.0	7.5	23.0	22.5	25.0	---	28.0
5	---	---	3.0	11.0	3.0	5.5	22.0	12.5	23.0	25.0	---	27.5
6	---	---	1.0	13.0	2.5	4.0	10.0	20.0	22.0	25.0	---	---
7	---	14.0	.5	.0	9.0	10.0	16.5	16.0	24.0	25.5	---	---
8	---	13.0	3.0	1.0	2.0	8.0	5.0	20.0	23.0	25.0	---	23.0
9	---	10.5	6.0	10.0	.0	8.0	6.0	30.0	20.0	26.0	---	24.0
10	---	6.0	15.0	8.5	.0	14.0	8.0	17.0	22.0	25.0	---	23.0
11	---	4.0	10.5	5.5	2.5	11.0	12.0	17.0	20.0	25.0	---	22.5
12	---	6.5	1.0	5.5	5.0	14.0	7.5	---	22.5	---	---	22.0
13	---	2.0	3.5	5.0	6.0	6.0	6.0	---	23.0	---	---	22.0
14	---	2.5	3.0	8.5	10.0	4.5	14.0	---	22.5	---	---	21.5
15	---	2.0	4.0	8.0	9.0	8.0	15.0	17.0	22.0	---	---	22.0
16	---	11.5	3.0	12.0	2.0	14.0	7.0	17.0	22.5	---	---	22.0
17	---	5.0	.0	11.0	.5	6.0	24.0	19.0	23.0	---	23.0	17.0
18	---	10.5	.0	8.5	1.5	1.0	21.0	19.0	23.0	---	34.0	18.5
19	---	11.0	3.0	13.0	8.0	9.5	9.0	18.0	25.0	---	23.0	21.5
20	---	17.0	4.0	5.0	7.0	7.0	12.0	19.5	23.5	---	---	---
21	---	7.0	7.0	5.0	6.5	5.0	12.5	20.0	24.0	---	---	---
22	---	1.0	9.0	2.5	9.0	7.0	14.0	18.5	23.0	---	---	---
23	---	7.0	9.0	4.0	11.0	14.0	26.5	20.0	24.0	---	---	19.0
24	---	5.5	9.0	2.0	6.0	4.0	16.0	29.0	23.5	---	---	20.0
25	---	3.0	9.0	4.0	18.0	7.5	12.0	21.0	25.0	---	---	24.0
26	---	2.0	10.0	3.0	9.0	9.0	9.5	21.5	25.0	---	---	19.0
27	---	6.0	8.0	.0	4.0	14.0	9.0	22.0	33.5	---	---	17.0
28	---	2.0	8.0	3.0	8.0	8.0	13.5	21.0	25.0	---	---	15.0
29	---	1.0	5.0	.0	8.0	20.0	13.0	23.0	26.0	---	---	16.0
30	16.0	.0	3.0	3.5	---	7.5	16.0	23.5	24.0	---	---	17.0
31	12.0	---	11.0	.0	---	6.5	---	23.0	---	---	---	---
MEAN	14.0	6.5	5.0	6.0	5.5	7.5	12.5	20.0	23.5	25.0	26.5	21.5

08120500 DEEP CREEK NEAR DUNN, TX

LOCATION.--Lat 32°34'25", long 100°54'27", Scurry County, Hydrologic Unit 12080002, at center of downstream side of bridge on Farm Road 1606, 1.5 mi (2.4 km) northwest of Dunn, 2.7 mi (4.3 km) upstream from Sulphur Draw, and 8.6 mi (13.8 km) upstream from mouth.

DRAINAGE AREA.--198 mi² (513 km²), of which 10 mi² (25.9 km²) probably is noncontributing.

PERIOD OF RECORD.--April 1953 to current year.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,172.17 ft (662.077 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 21, 1955, nonrecording gage at same site and datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--27 years (water years 1954-80), 12.3 ft³/s (0.348 m³/s), 0.89 in/yr (23 mm/yr), 8,910 acre-ft/yr (11.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,700 ft³/s (586 m³/s) Aug. 14, 1972, gage height, 31.28 ft (9.534 m), from floodmarks, from rating curve extended above 12,000 ft³/s (340 m³/s) by velociy-area study; no flow for many days each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1881, 36,400 ft³/s (1,030 m³/s) June 19, 1939, by slope-area measurement at site 8.0 mi (12.9 km) upstream from gage. Flood in 1892 reached about same stage as that of June 19, 1939, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 850 ft³/s (24.1 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 15	1530	*17,200	487	a30.25	9.220
Sept. 9	0815	1,950	55.2	16.52	5.035
Sept. 28	1930	4,380	124	a23.37	7.123

a From floodmark.

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.02	2.1	1.5	1.5	1.4	.82	.02	.50	.05	.00	.00
2	.00	.01	2.2	1.5	1.6	.83	.82	.02	.77	.05	.00	.00
3	.00	.00	2.2	1.6	1.6	.57	.76	.01	1.0	.05	.00	.00
4	.00	.31	2.3	1.4	1.5	.85	.88	.01	.80	.03	.00	.00
5	.00	.55	2.3	1.3	1.4	1.2	.90	.01	1.9	.02	.00	.00
6	.00	.29	2.3	1.5	1.4	.76	1.1	.13	.83	.02	.00	.00
7	.00	.44	2.5	1.7	1.6	.37	1.1	.18	.27	.01	.00	1.4
8	.00	1.4	2.9	1.7	2.9	.21	1.0	.06	1.7	.01	.00	.15
9	.00	1.0	2.6	1.8	2.9	.23	1.1	.03	1.1	.01	.00	687
10	.00	.50	2.6	1.8	2.1	.55	1.2	.02	.62	.01	.00	17
11	.00	.46	2.6	1.9	1.9	.48	1.0	.01	27	.00	.00	4.7
12	.00	.80	4.3	1.9	1.5	.40	.80	.01	2.6	.00	.00	4.0
13	.00	.83	7.4	2.0	1.4	.38	.94	.01	.86	.00	.00	3.8
14	.00	.88	13	2.1	1.4	.21	.97	.01	.62	.00	.00	3.6
15	.00	.94	3.7	2.0	1.4	.12	.98	5320	.15	.00	.00	3.6
16	.00	.55	2.0	2.0	1.3	.08	.91	656	.08	.00	.00	3.4
17	.00	.33	1.5	2.0	.78	.11	.67	18	.04	.00	.00	3.4
18	.00	1.5	1.6	2.0	1.2	.26	.65	6.0	.02	.00	.00	3.4
19	.00	1.6	1.6	2.1	1.4	.82	.68	3.9	.01	.00	.00	3.4
20	.00	3.4	1.5	2.1	1.3	.96	.62	4.3	.02	.00	.00	3.4
21	.00	5.2	1.5	2.0	1.4	.83	.55	2.5	.89	.00	.00	3.4
22	.00	1.1	1.6	2.8	1.6	.68	.42	1.6	.20	.00	.00	3.4
23	.00	.72	1.7	5.6	1.8	.60	.40	1.1	.08	.00	.00	56
24	.00	.92	2.6	2.3	1.4	.59	.83	.95	.05	.00	.00	18
25	.00	1.1	1.6	1.9	1.3	.39	3.3	.95	.07	.00	.00	15
26	.00	1.3	1.6	1.9	1.3	.26	1.0	.80	.05	.00	.00	830
27	.00	1.6	1.6	2.7	1.2	.47	.19	.80	.06	.00	.00	577
28	.00	1.9	2.1	1.9	1.5	.93	.06	.58	.05	.00	.00	2910
29	.00	1.8	2.6	1.7	1.4	1.7	.06	1.2	.05	.00	.00	1160
30	3.2	1.9	1.7	1.7	---	1.4	.04	1.2	.04	.00	.00	117
31	.36	---	1.5	1.6	---	1.1	---	.84	---	.00	.00	---
TOTAL	3.56	33.35	83.3	62.0	44.98	19.74	24.75	6021.25	42.43	.26	.00	6432.05
MEAN	.11	1.11	2.69	2.00	1.55	.64	.83	194	1.41	.008	.000	214
MAX	3.2	5.2	13	5.6	2.9	1.7	3.3	5320	27	.05	.00	2910
MIN	.00	.00	1.5	1.3	.78	.08	.04	.01	.01	.00	.00	.00
CFSM	.001	.006	.01	.01	.008	.003	.004	1.03	.008	.000	.000	1.14
IN.	.00	.01	.02	.01	.01	.00	.00	1.19	.01	.00	.00	1.27
AC-FT	7.1	66	165	123	89	39	49	11940	84	.5	.00	12760

CAL YR 1979 TOTAL 2649.12 MEAN 7.26 MAX 573 MIN .00 CFSM .04 IN .52 AC-FT 5250
WTR YR 1980 TOTAL 12767.67 MEAN 34.9 MAX 5320 MIN .00 CFSM .19 IN 2.53 AC-FT 25320

08120700 COLORADO RIVER NEAR CUTHBERT, TX

LOCATION.--Lat 32°28'41", long 100°56'54", Mitchell County, Hydrologic Unit 12080002, on left bank at downstream side of bridge on Farm Road 1808, 4.0 mi (6.4 km) downstream from Deep Creek, 4.8 mi (7.7 km) east of Cuthbert, 8.0 mi (12.9 km) northwest of Colorado City, and at mile 810.6 (1,304.3 km).

DRAINAGE AREA.--4,028 mi² (10,433 km²), of which 2,600 mi² (6,730 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,073.49 ft (632.000 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Flow is partly regulated by Lake J. B. Thomas (station 08118000).

AVERAGE DISCHARGE.--15 years (water years 1966-80), 36.5 ft³/s (1.034 m³/s), 26,440 acre-ft/yr (32.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft³/s (326 m³/s) Aug. 14, 1972, gage height, 25.99 ft (7.922 m); maximum gage height, 27.18 ft (8.284 m) Sept. 29, 1980; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in 1941 and 1946 reached a stage of 36.1 ft (11.00 m), from State Department of Highways and Public Transportation bridge plans.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,300 ft³/s (320 m³/s) Sept. 29 at 0130 hours, gage height, 27.18 ft (8.284 m); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.37	1.9	3.9	3.1	2.9	2.5	1.0	9.5	2.3	.00	.00
2	.00	.16	1.9	3.8	3.1	2.7	2.1	.74	7.7	1.8	.00	.00
3	.00	.14	1.8	3.8	2.9	2.5	1.9	.74	6.7	1.3	.00	.00
4	.00	.12	1.8	3.6	2.9	2.4	1.7	.99	6.5	.97	.00	.00
5	.00	.12	1.8	3.6	2.9	2.3	1.5	1.0	5.7	.76	.00	.00
6	.00	.10	1.6	3.6	2.8	2.1	1.4	.99	5.4	.56	.00	.00
7	.00	.14	1.6	3.6	2.5	2.5	1.3	1.0	4.5	.42	.00	.00
8	.00	.19	1.8	3.4	3.1	2.4	1.4	.85	37	.25	.00	33
9	.00	1.8	1.9	3.1	4.7	2.1	1.1	.70	72	.24	.00	3530
10	.00	1.6	1.9	3.1	6.8	1.9	1.1	.83	16	.20	.00	1140
11	.00	1.1	1.9	3.1	5.4	1.9	1.2	.72	131	.13	.00	52
12	.00	.82	13	2.9	5.3	1.9	1.2	.65	109	.11	.00	20
13	.00	.66	26	2.9	4.9	2.4	1.1	.52	58	.09	.00	11
14	.00	.66	16	2.9	4.3	2.1	1.1	.49	31	.06	.00	7.3
15	.00	.82	11	2.9	4.2	1.9	1.2	2500	15	.03	.00	5.7
16	.00	1.0	6.3	2.9	3.9	1.9	1.2	7550	9.5	.01	42	4.6
17	.00	1.0	4.2	2.7	3.6	1.9	1.2	1360	7.1	.00	26	3.5
18	.00	.98	3.8	2.9	3.6	1.7	.98	179	6.4	.00	3.0	3.0
19	.00	.88	3.1	2.9	3.6	1.6	.90	81	5.6	.00	1.4	2.8
20	.00	1.0	3.0	2.9	3.5	1.7	1.0	64	5.0	.00	.83	2.1
21	.00	33	2.9	2.9	3.5	1.9	1.0	109	40	.00	.53	1.9
22	.00	9.9	2.9	4.2	3.2	2.1	1.0	44	372	.00	.34	1.6
23	.00	3.8	3.3	7.2	3.1	2.0	1.0	31	38	.00	.16	28
24	.00	2.3	3.4	11	3.4	2.0	1.3	25	19	.00	.06	236
25	.00	1.9	3.9	6.4	3.6	1.7	1.3	21	12	.00	.01	107
26	.00	2.1	4.1	5.0	3.4	1.7	3.1	17	8.9	.00	.00	702
27	.00	1.9	3.5	4.1	3.4	2.7	2.7	16	6.9	.00	.00	1290
28	.00	1.9	4.0	4.1	3.1	3.2	1.8	14	5.5	.00	.00	5780
29	.00	1.9	4.1	4.4	2.9	2.7	1.6	13	4.3	.00	.00	8770
30	.37	1.9	5.0	3.8	---	2.4	1.3	11	3.3	.00	.00	2560
31	1.1	---	4.6	3.5	---	2.7	---	10	---	.00	.00	---
TOTAL	1.47	74.26	148.0	121.1	106.7	67.9	43.18	12056.22	1058.5	9.23	74.33	24291.50
MEAN	.047	2.48	4.77	3.91	3.68	2.19	1.44	389	35.3	.30	2.40	810
MAX	1.1	33	26	11	6.8	3.2	3.1	7550	372	2.3	42	8770
MIN	.00	.10	1.6	2.7	2.5	1.6	.90	.49	3.3	.00	.00	.00
AC-FT	2.9	147	294	240	212	135	86	23910	2100	18	147	48180

CAL YR 1979 TOTAL 9385.46 MEAN 25.7 MAX 2090 MIN .00 AC-FT 18620
WTR YR 1980 TOTAL 38052.39 MEAN 104 MAX 8770 MIN .00 AC-FT 75480

08120700 COLORADO RIVER NEAR CUTHBERT, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: March 1965 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: March 1965 to current year.
WATER TEMPERATURES: March 1965 to current year.

INSTRUMENTATION.--Specific conductance is recorded continuously at this station.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 70,000 micromhos Nov. 17, 1968; minimum daily, 102 micromhos Sept. 28, 1980.
WATER TEMPERATURES: Minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 14,900 micromhos Nov. 6; minimum daily, 102 micromhos Sept. 28.
WATER TEMPERATURES: Minimum daily, 4.0°C Dec. 17, Jan. 29, and Feb. 9.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
NOV										
16...	1115	.99	3610	--	10.0	610	430	150	57	520
DEC										
19...	1230	3.1	2880	--	4.0	510	290	130	45	420
JAN										
09...	1645	3.0	4210	--	6.0	740	510	180	71	620
FEB										
06...	1555	2.7	5420	--	11.5	870	620	210	84	830
MAR										
05...	1150	2.2	4790	--	7.5	880	640	200	93	710
APR										
24...	0700	1.0	6830	--	19.0	1300	1000	280	140	1000
MAY										
16...	0145	5700	257	--	17.0	110	14	40	3.0	13
30...	0930	13	11400	7.7	24.5	1500	1200	350	140	2000

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
NOV									
16...	9.2	11	220	0	440	860	.4	3.0	2150
DEC									
19...	8.1	11	270	0	350	640	.7	10	1740
JAN									
09...	9.9	11	280	0	510	1000	.7	.6	2530
FEB									
06...	12	11	300	0	650	1300	.8	3.9	3240
MAR									
05...	10	10	290	0	750	970	1.3	1.8	2880
APR									
24...	12	11	330	0	1000	1600	1.0	1.2	4200
MAY									
16...	.5	5.5	120	0	24	33	.5	10	188
30...	23	12	300	0	970	3200	.6	5.5	6830

08120700 COLORADO RIVER NEAR CUTHBERT, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	1.47	13800	8460	34	4200	17	1400	5.6	*
NOV.	1979	74.26	4240	2590	519	990	198	570	114	710
DEC.	1979	148.0	3870	2360	944	860	344	540	215	680
JAN.	1980	121.1	4770	2910	952	1100	360	640	211	800
FEB.	1980	106.7	5400	3300	950	1300	363	720	208	900
MAR.	1980	67.9	5300	3230	593	1200	226	710	131	880
APR.	1980	43.18	6150	3750	438	1500	172	810	94	990
MAY	1980	12056.22	691	422	13700	160	5170	94	3050	120
JUNE	1980	1058.5	2890	1760	5030	650	1870	390	1130	500
JULY	1980	9.23	6040	3690	92	1500	36	790	20	970
AUG.	1980	74.33	4040	2460	494	890	180	560	113	710
SEPT	1980	24291.50	323	197	12900	64	4170	49	3180	64
TOTAL		38052.39	**	**	36700	**	13100	**	8470	**
WTD. AVG.		104	586	357	**	130	**	82	**	110

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	14600	3120	3190	5360	4310	5830	5070	10600	4700	---	---
2	---	14300	3000	3400	5710	4520	5450	5270	10600	5290	---	---
3	---	14200	2930	3540	5420	4760	5330	5400	10400	5850	---	---
4	---	14300	2870	3610	5940	4990	5320	5580	10100	6470	---	---
5	---	14700	2980	3730	5740	4790	5400	5770	10400	7080	---	---
6	---	14900	325C	3850	5410	5220	5570	5860	10100	7650	---	---
7	---	14800	3310	4040	5070	5530	5700	6200	10000	8240	---	---
8	---	13400	3080	4160	4900	5570	5770	6490	6670	7950	---	5570
9	---	12000	3060	4210	5000	5210	5930	6600	4410	7710	---	200
10	---	9910	3010	4050	4700	5220	6070	6700	5030	7150	---	650
11	---	7160	3050	4110	4950	5330	6250	7030	2850	7180	---	3830
12	---	6630	3240	4170	5300	5320	6460	7190	4050	7390	---	5420
13	---	5390	4830	4130	5100	5460	6560	7340	3290	7450	---	6460
14	---	4550	5950	4250	5630	5600	6640	7470	3410	7440	---	6700
15	---	4220	3070	4050	6100	5590	6700	186	4370	7270	---	6280
16	---	3630	2820	4120	6150	5650	6760	318	4940	7210	3970	5820
17	---	3170	3100	4140	6040	5540	6890	474	5420	---	4010	6160
18	---	3070	3090	4030	5430	5400	7040	4220	5680	---	4270	6440
19	---	3160	2870	4040	5590	5580	7220	7610	5910	---	4440	7120
20	---	3010	3130	4010	6050	5620	7300	9180	5860	---	4890	7540
21	---	3930	3460	3460	6150	5600	7240	6380	1970	---	5270	7730
22	---	2770	3240	4050	5640	5520	7180	7360	939	---	5640	7990
23	---	3070	3710	3910	5480	5810	7150	9710	985	---	5930	5210
24	---	3380	3840	5760	5400	5480	7390	11500	1010	---	6240	2000
25	---	3580	3840	5870	5080	5300	6870	11700	1150	---	6500	2450
26	---	3680	3950	7180	4880	5360	6480	11900	1640	---	---	281
27	---	3780	3830	8090	4990	5560	5590	12000	2330	---	---	238
28	---	3800	3650	7330	5120	5350	5780	11900	2900	---	---	200
29	---	3730	3630	6820	5230	5020	5250	11500	3510	---	---	250
30	14700	3470	3990	5630	---	5300	5190	11400	4120	---	---	348
31	13500	---	3560	5330	---	5670	---	10700	---	---	---	---
MEAN	14100	7210	3430	4590	5430	5330	6280	7290	5150	7000	5120	4130

08120700 COLORADO RIVER NEAR CUTHBERT, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		12.0	9.0	---	8.0	11.0	18.0	18.0				
2		12.0	11.0	---	8.0	9.0	17.0	18.0				
3		12.0	11.0	9.0	8.0	7.0	15.0	18.0				
4		15.0	10.0	9.0	8.0	6.0	16.0	18.0				
5		11.0	12.0	9.0	9.0	9.0	16.0	18.0				
6		11.0	11.0	10.0	8.0	8.0	17.0	20.0				
7		11.0	12.0	7.0	9.0	7.0	16.0	21.0				
8		11.0	11.0	6.0	7.0	7.0	16.0	20.0				
9		14.0	12.0	5.0	4.0	7.0	15.0	19.0				
10		10.0	12.0	---	5.0	7.0	16.0	20.0				
11		9.0	13.0	6.0	6.0	6.0	18.0	20.0				
12		9.0	7.0	10.0	7.0	9.0	19.0	20.0				
13		9.0	7.0	10.0	7.0	11.0	12.0	---				
14		9.0	7.0	10.0	8.0	11.0	14.0	---				
15		10.0	7.0	11.0	8.0	12.0	16.0	18.0				
16		10.0	5.0	11.0	7.0	14.0	16.0	17.0				
17		10.0	4.0	---	5.0	16.0	16.0	17.0				
18		9.0	---	10.0	6.0	13.0	16.0	20.0				
19		9.0	5.0	10.0	9.0	14.0	16.0	19.0				
20		10.0	9.0	9.0	10.0	12.0	18.0	20.0				
21		11.0	10.0	9.0	11.0	15.0	20.0	20.0				
22		12.0	11.0	8.0	10.0	15.0	20.0	20.0				
23		13.0	8.0	7.0	10.0	16.0	20.0	20.0				
24		13.0	7.0	5.0	10.0	17.0	19.0	20.0				
25		10.0	6.0	6.0	10.0	18.0	18.0	20.0				
26		10.0	8.0	7.0	11.0	---	18.0	---				
27		11.0	9.0	6.0	13.0	---	18.0	---				
28		6.0	9.0	5.0	12.0	21.0	18.0	---				
29		7.0	10.0	4.0	12.0	22.0	18.0	---				
30		7.0	10.0	5.0	---	21.0	18.0	---				
31		---	10.0	5.0	---	20.0	---	---				
MEAN		10.5	9.0	7.5	8.5	12.5	17.0	19.0				

08121000 COLORADO RIVER AT COLORADO CITY, TX

LOCATION.--Lat 32°23'33", long 100°52'42", Mitchell County, Hydrologic Unit 12080002, on right bank at Colorado City, 3,517 ft (1,072 m) upstream from bridge on State Highway 377, 4,100 ft (1,250 m) upstream from the Texas and Pacific Railroad Co. bridge, 1.3 mi (2.1 km) downstream from bridge on Interstate Highway 20 and U.S. Highway 80, 1.6 mi (2.6 km) upstream from Lone Wolf Creek, and at mile 796.3 (1,281.2 km).

DRAINAGE AREA.--4,082 mi² (10,572 km²), of which 2,600 mi² (6,730 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1923 to August 1925 (published as "at Colorado"), May 1946 to current year.

REVISED RECORDS.--WSP 1118: Drainage area. WSP 1512: 1946(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,030.16 ft (618.793 m) National Geodetic Vertical Datum of 1929. Nov. 28, 1923, to Aug. 31, 1925, nonrecording gage at site 1.4 mi (2.3 km) downstream at different datum. May 9 to Aug. 5, 1946, nonrecording gage at site 185 ft (56 m) upstream at present datum.

REMARKS.--Water-discharge records good. Some regulation since 1952 by Lake J. B. Thomas (station 08118000). Numerous diversions from Lake J. B. Thomas for municipal use and oilfield operation. Record of diversion from river, 3 mi (5 km) upstream from gage, furnished by Colorado River Municipal Water District.

AVERAGE DISCHARGE.--6 years (water years 1947-52) prior to completion of Lake J. B. Thomas, 85.4 ft³/s (2.419 m³/s), 61,870 acre-ft/yr (76.3 hm³/yr); 28 years (water years 1953-80) regulated, 38.0 ft³/s (1.076 m³/s), 27,530 acre-ft/yr (33.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,900 ft³/s (705 m³/s) July 6, 1948, gage height, 22.37 ft (6.818 m), from floodmark; maximum gage height, 27.81 ft (8.476 m) Sept. 29, 1980, backwater from Salt Cedar; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1910, 35.9 ft (10.94 m) June 20, 1939, present site and datum, based on floodmarks 1,000 ft (305 m) upstream and 3,740 ft (1,140 m) downstream from gage; discharge, 66,000 ft³/s (1,870 m³/s), by slope-area measurement of peak flow at site 2.5 mi (4.0 km) upstream from gage.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,400 ft³/s (295 m³/s) Sept. 29 at 1130 hours, gage height, 27.81 ft (8.476 m), backwater from Salt Cedar; minimum, 0.01 ft³/s (0.0003 m³/s) May 11-14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.15	.05	.15	.41	.42	.74	.22	.03	1.2	5.8	.08	.06
2	.15	.07	.14	.60	.62	.54	.41	.05	1.2	2.0	.11	.08
3	.15	.09	.09	.50	.62	.62	.41	.07	1.2	.58	.10	.08
4	.15	.11	.13	.41	.69	.71	.30	.14	1.1	.41	.10	.08
5	.15	.13	.15	.45	.86	.46	.41	.09	1.0	.41	.13	.05
6	.15	.09	.15	.92	.73	.45	.48	.44	.63	.41	.14	.06
7	.17	.19	.15	.92	1.0	.70	.36	1.1	.60	.38	.16	.08
8	.13	.19	.15	.92	1.7	.62	.22	.04	1.3	.35	.14	.08
9	.09	.15	.20	.92	1.2	.62	.27	.03	20	.33	.08	992
10	.09	.11	.24	1.0	.88	.69	.37	.03	46	.28	.08	3280
11	.12	.09	.24	1.2	.68	.65	.39	.06	149	.28	.12	215
12	.15	.12	1.3	1.0	.62	.86	.54	.01	205	.28	.13	6.0
13	.15	.15	.52	1.2	.77	.32	.55	.01	93	.23	.10	3.5
14	.15	.15	.79	1.2	.62	.26	.44	.02	47	.21	.11	3.0
15	.24	.15	.21	1.3	.70	.36	.41	306	26	.19	.13	2.7
16	.17	.15	.17	1.4	.60	.65	.41	6990	18	.17	3.2	2.4
17	.16	.15	.12	1.2	.56	.81	.25	3230	14	.12	1.2	2.1
18	.25	.16	.20	1.3	.92	.36	.15	437	9.3	.03	.13	2.1
19	.21	.15	.32	1.6	.97	.45	.15	98	1.2	.03	.09	2.1
20	.12	.24	.41	1.4	.80	.79	.21	4.2	.87	.04	.06	2.0
21	.10	.32	.41	1.1	.64	.32	.23	30	7.6	.05	.03	1.8
22	.09	.16	.47	2.9	.64	.27	.20	3.9	355	.04	.03	1.8
23	.12	.13	.69	.96	.80	.44	.16	2.0	112	.04	.03	8.7
24	.15	.14	.37	.57	.98	.13	.33	1.7	32	.03	.03	154
25	.24	.18	.24	.62	.92	.13	.13	1.7	17	.03	.03	318
26	.24	.14	.28	.62	.78	.24	.08	1.8	12	.05	.03	432
27	.24	.13	.41	.62	.97	.63	.05	1.7	9.4	.05	.05	1220
28	.24	.15	.94	.75	.92	.52	.11	1.5	7.8	.04	.05	3420
29	.27	.16	.45	.92	.93	.35	.18	1.4	7.0	.04	.09	8860
30	.41	.15	.41	.92	---	.17	.25	1.4	6.1	.04	.08	4540
31	.09	---	.41	.51	---	.17	---	1.3	---	.05	.07	---
TOTAL	5.29	4.35	10.91	30.34	23.54	15.03	8.67	11115.72	1203.50	12.99	6.91	23469.77
MEAN	.17	.15	.35	.98	.81	.48	.29	359	40.1	.42	.22	782
MAX	.41	.32	1.3	2.9	1.7	.86	.55	6990	355	5.8	3.2	8860
MIN	.09	.05	.09	.41	.42	.13	.05	.01	.60	.03	.03	.05
AC-FT	10	8.6	22	60	47	30	17	22050	2390	26	14	46550
(†)	8.0	159	397	293	219	184	152	1270	363	44	130	775

CAL YR 1979 TOTAL 9725.38 MEAN 26.6 MAX 1740 MIN .00 AC-FT 19290 † 3260
WTR YR 1980 TOTAL 35907.02 MEAN 98.1 MAX 8860 MIN .01 AC-FT 71220 † 3990

† Diversions, in acre-feet, for brine disposal by Colorado River Municipal Water District.

08121000 COLORADO RIVER AT COLORADO CITY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1946 to September 1954, November 1956 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 1946 to September 1954, November 1956 to current year.
WATER TEMPERATURES: November 1952 to September 1954, November 1956 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (1946-54, 1956-69, 1971-80): Maximum daily, 67,400 micromhos May 14, 17, 1961; minimum daily, 240 micromhos Sept. 29, 1980.
WATER TEMPERATURES (1956-69, 1971-78): Maximum daily, 37.0°C July 29, 1960, July 9, 1965, and July 1, 1973; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 32,000 micromhos Apr. 28; minimum daily, 240 micromhos Sept. 29.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	TEMPER-ATURE, WATER (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT 01...	1100	.03	14000	21.5	1200	950	220	160	2700
NOV 01...	0930	.05	25400	7.5	2300	2100	500	250	5000
DEC 18...	1325	.28	27400	7.0	2200	2000	520	220	5800
JAN 24...	1346	.54	21900	5.0	2000	1800	470	200	4800
MAR 06...	1120	.58	25700	10.0	2100	1900	480	230	5500
APR 17...	1120	.43	29500	15.0	2600	2400	590	280	6100
MAY 17...	1305	3230	373	19.5	120	25	39	4.4	29
28...	1119	1.4	11600	26.0	1200	910	270	120	2200
JUL 02...	1120	1.8	7520	29.0	800	680	190	80	1400
SEP 29...	1200	10400	195	15.0	65	4	22	2.4	13

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 01...	34	13	320	0	1500	3700	.7	5.2	8460
NOV 01...	46	28	180	0	1500	8000	.7	.4	15400
DEC 18...	54	21	270	0	2000	9200	.7	2.5	17900
JAN 24...	47	18	240	0	1600	7600	.4	1.9	14800
MAR 06...	52	20	260	0	1600	9000	.8	1.1	17000
APR 17...	52	23	270	0	2600	9300	.9	1.2	19000
MAY 17...	1.2	5.7	110	0	29	47	.4	8.2	217
28...	28	12	310	0	1300	3300	.8	3.0	7360
JUL 02...	21	9.9	150	0	690	2100	.5	3.8	4550
SEP 29...	.7	2.8	74	0	16	15	.2	5.8	121

08121000 COLORADO RIVER AT COLORADO CITY, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	5.29	17800	11400	163	5300	76	1800	26	*
NOV.	1979	4.35	27700	18000	212	9000	106	2200	26	*
DEC.	1979	10.91	27500	17800	525	8900	263	2200	65	*
JAN.	1980	30.34	25200	16300	1340	8000	657	2200	177	*
FEB.	1980	23.54	24300	15700	1000	7700	488	2100	136	*
MAR.	1980	15.03	26200	17000	689	8400	341	2200	89	*
APR.	1980	8.67	29100	19000	444	9600	224	2200	53	*
MAY	1980	11115.72	763	481	14400	190	5810	100	3130	100
JUNE	1980	1203.50	3240	2050	6660	850	2750	420	1380	410
JULY	1980	12.99	7700	4890	171	2100	73	960	34	940
AUG.	1980	6.91	9630	6120	114	2600	49	1200	22	1100
SEPT	1980	23469.77	656	413	26200	170	10500	90	5730	88
TOTAL		35907.02	**	**	51900	**	21300	**	10900	**
WTD. AVG.		98	848	536	**	220	**	110	**	110

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13900	25300	29400	25600	25200	26000	27800	30600	12300	7030	9890	14600
2	14100	25100	29100	25200	23500	26200	28600	30400	11800	7520	9850	14300
3	14000	24500	29600	25600	24700	25500	24300	30200	12500	7750	9990	14400
4	14400	23900	29500	25500	23600	23600	28100	30500	12200	7840	10100	14200
5	14300	24100	30000	25700	25400	25900	28500	30600	12400	7950	9970	14700
6	14400	24300	29600	25900	23300	26300	29000	30700	12800	8070	9940	14500
7	14200	25500	[illegible]	26300	25000	25100	28300	30500	12600	8200	9900	14000
8	14800	26600	[illegible]	26500	23300	24900	29600	30700	14000	8290	10200	14100
9	14700	27300	30000	26300	23600	26200	28400	30800	11000	8380	10600	3250
10	15200	27100	29800	26100	24700	25300	29400	30600	8420	8600	10800	1100
11	15400	27400	29700	25900	25100	26400	28500	26200	4500	8740	10600	1550
12	15500	27300	28100	25500	25500	24300	30100	26000	1950	8880	10500	2480
13	15400	27500	27200	27200	24900	27000	30000	26800	3200	9010	10700	3270
14	15600	27800	27000	26700	25300	27500	29500	26500	4450	8950	10600	4090
15	15800	28200	27400	26100	24600	27000	29700	3700	5160	9000	10200	4750
16	17000	27900	27500	25300	25000	26000	29400	575	5880	9060	8900	5560
17	18000	28300	27600	26300	25900	26300	29200	373	6000	9240	9550	6380
18	18200	28200	27400	25800	23500	26100	28500	2550	6130	9420	9840	7210
19	18100	28800	26800	26900	22900	27700	29600	5420	6400	9570	10000	8000
20	19300	28400	26400	26100	23700	26600	28600	8000	6690	9500	10200	8850
21	19000	28000	26200	25500	24800	27100	29500	6500	7160	9480	10500	9680
22	19600	28700	25700	22400	25000	25600	30000	7480	1550	9600	11100	10500
23	20100	29100	27500	22000	24100	28000	29900	8460	2290	9770	11400	9750
24	19600	29300	26800	21900	23000	25200	29800	9440	3010	9960	11800	3000
25	19800	29500	27400	22700	23600	26600	30500	10400	3450	10400	12000	2450
26	19300	29600	26400	23900	24800	26000	30300	11400	3870	10000	12200	1500
27	19400	29400	27300	25000	24000	28100	31900	10700	4450	9960	11900	800
28	20600	29300	26900	24200	24900	27800	32000	11700	5070	10100	12000	450
29	21400	29500	26200	23600	25600	28800	31400	11900	5450	10300	11700	240
30	22500	29000	27000	23900	---	28300	30700	11400	5830	10200	12600	320
31	25700	---	26000	24700	---	25800	---	11600	---	10000	14200	---
MEAN	17400	27500	27900	25200	24400	26400	29400	17500	7080	9060	10800	7000

08121000 COLORADO RIVER AT COLORADO CITY, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.5	7.5	1.5	3.5	5.5	1.0	10.0	15.0	---	29.5		
2	14.0	7.0	1.0	5.0	3.0	.5	15.0	16.5	---	27.0		
3	14.5	7.5	9.0	3.0	11.5	10.0	10.5	17.0	---	25.5		
4	13.5	7.0	3.5	4.0	14.0	4.0	16.0	16.0	---	28.5		
5	14.0	19.5	6.0	8.5	11.0	5.5	13.0	21.0	---	26.0		
6	12.5	8.0	1.5	4.0	14.5	4.5	15.0	17.0	---	---		
7	13.0	10.5	13.5	6.0	9.0	13.5	18.0	21.0	---	---		
8	13.5	17.0	12.0	9.5	4.0	9.5	10.0	18.0	---	---		
9	14.0	13.5	13.5	8.5	---	---	9.5	---	---	---		
10	23.5	10.0	---	4.0	---	---	13.0	---	---	---		
11	25.5	15.0	13.0	4.5	---	---	11.5	26.5	---	---		
12	24.0	8.0	3.5	3.0	---	---	7.5	29.0	---	---		
13	18.0	15.5	---	5.0	---	---	15.5	28.0	29.5	36.0		
14	23.0	14.0	---	6.5	---	---	13.5	---	24.5	34.0		
15	21.5	16.0	---	5.0	---	---	9.5	18.0	35.0	25.0		
16	26.5	9.0	---	6.0	---	---	8.0	15.0	33.0	28.5		
17	26.0	11.0	---	7.5	---	10.0	14.5	---	32.5	36.0		
18	18.0	8.0	---	4.5	---	8.0	13.0	---	31.0	35.5		
19	16.0	13.5	3.0	5.0	---	8.5	13.0	---	34.5	---		
20	17.0	12.0	2.5	3.0	---	9.5	14.0	---	25.0	---		
21	15.0	---	2.0	---	---	8.0	17.0	---	36.0	---		
22	13.5	---	2.0	---	---	9.0	18.5	---	27.0	---		
23	13.0	---	3.0	---	---	7.5	23.0	---	33.0	---		
24	11.0	---	4.0	---	---	9.0	19.0	---	30.0	---		
25	9.0	14.0	4.5	---	---	8.5	18.0	---	35.5	---		
26	8.0	13.5	5.0	---	---	10.0	16.5	18.0	26.5	---		
27	8.0	7.5	3.0	---	---	18.0	27.0	19.0	31.0	---		
28	---	5.0	2.5	---	---	8.5	19.5	---	25.5	---		
29	---	1.0	3.0	---	---	19.0	19.0	---	26.5	---		
30	15.5	2.0	5.5	---	---	9.5	17.0	---	24.0	---		
31	17.0	---	1.5	---	---	20.0	---	---	---	---		
MEAN	16.5	10.5	5.0	5.5	9.0	9.0	15.0	19.5	30.0	30.0		

08123000 LAKE COLORADO CITY NEAR COLORADO CITY, TX

LOCATION.--Lat 32°20'41", long 100°55'10", Mitchell County, Hydrologic Unit 12080002, on left bank at municipal water-intake structure, 1.7 mi (2.7 km) upstream from Colorado City Dam on Morgan Creek, 2.2 mi (3.5 km) downstream from the Texas and Pacific Railway Co. bridge, 2.5 mi (4.0 km) upstream from mouth, and 4.0 mi (6.4 km) southwest of Colorado City.

DRAINAGE AREA.--322 mi^2 (834 km^2), of which 32 mi^2 (83 km^2) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1949 to current year.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Aug. 23, 1950, nonrecording gages at or near powerplant about 0.7 mi (1.1 km) downstream at same datum.

REMARKS.--The lake is formed by a rolled earthfill dam 4,800 ft (1,460 m) long. Storage began in April 1949, and the dam was completed in September 1949. The dam and lake are owned by the Texas Electric Service Co. to operate their thermal electric powerplant. The uncontrolled emergency spillway is an excavated cut channel through natural ground 1,200 ft (366 m) wide located 600 ft (180 m) upstream and to the left of left end of dam. The spillway is designed to discharge 150,000 ft^3/s (4,250 m^3/s) at the maximum design flood elevation. The service spillway is an uncontrolled rectangular drop inlet located 100 ft (30 m) upstream from dam with two uncontrolled openings of 10.0 by 12.0 ft (3.0 by 3.7 m). The spillway is designed for a maximum discharge of 5,000 ft^3/s (142 m^3/s). A service outlet is provided for small releases downstream through a 30-inch (762 mm) valve-controlled concrete pipe. Records furnished by the Texas Electric Service Co. indicate that 7,340 acre-ft (9.05 hm^3) was pumped from Champion Creek Reservoir (station 08123600) into Lake Colorado City during the current year. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	2,090.0	-
Design flood	2,086.7	70,700
Crest of spillway	2,073.7	37,850
Crest of service spillway (top of conservation pool)	2,070.2	31,810
Lowest gated outlet (invert)	2,024.3	316

COOPERATION.--Capacity curve was furnished by the Texas Electric Service Co. Record of diversions for municipal use was furnished by the city of Colorado City.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 40,280 acre-ft (49.7 hm^3) Sept. 7, 1962, elevation, 2,075.10 ft (632.490 m); minimum since first appreciable storage, 5,800 acre-ft (7.15 hm^3) Apr. 11-13, 1950, elevation, 2,045.72 ft (623.536 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 38,690 acre-ft (47.7 hm^3) Sept. 29, elevation, 2,074.15 ft (632.201 m); minimum, 14,500 acre-ft (17.9 hm^3) Sept. 3-7, elevation, 2,056.70 ft (626.882 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

2,056.0	13,820	2,070.0	31,480
2,060.0	17,980	2,075.0	40,330
2,065.0	24,140		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16210	15020	15260	16130	16790	17450	16870	15940	17550	16720	14920	14530
2	16170	15000	15280	16150	16820	17480	16830	15920	17510	16650	14860	14520
3	16110	14980	15300	16170	16850	17500	16800	15910	17470	16580	14810	14500
4	16080	14950	15330	16190	16880	17510	16780	15900	17420	16520	14760	14500
5	16030	14910	15350	16230	16890	17500	16750	15890	17370	16460	14690	14510
6	15990	14890	15370	16250	16920	17490	16720	15880	17300	16390	14630	14500
7	15950	14900	15380	16260	16940	17470	16660	15860	17260	16330	14620	14580
8	15900	14890	15400	16280	16970	17440	16630	15820	17320	16280	14610	14600
9	15830	14900	15430	16310	17020	17430	16600	15790	17300	16200	14610	14890
10	15800	14910	15480	16340	17040	17410	16570	15740	17270	16140	14600	15060
11	15760	14930	15480	16330	17070	17410	16530	15720	17420	16100	14610	15090
12	15730	14940	15560	16360	17090	17370	16480	15670	17400	16050	14620	15110
13	15670	14970	15600	16380	17120	17330	16440	15630	17390	15970	14620	15120
14	15650	14980	15650	16420	17150	17310	16420	15630	17340	15900	14610	15130
15	15640	15000	15670	16440	17160	17300	16380	15810	17300	15840	14600	15130
16	15620	15030	15670	16460	17160	17290	16350	16570	17260	15770	14660	15130
17	15600	15050	15700	16460	17190	17240	16350	17170	17200	15710	14640	15120
18	15570	15080	15730	16490	17240	17210	16310	17180	17160	15640	14590	15130
19	15530	15100	15760	16510	17250	17190	16280	17160	17120	15580	14570	15130
20	15480	15130	15800	16490	17270	17150	16260	17170	17080	15530	14570	15110
21	15450	15130	15840	16490	17270	17130	16230	17210	17120	15500	14570	15110
22	15380	15140	15870	16580	17280	17100	16190	17880	17120	15450	14570	15110
23	15340	15150	15900	16610	17310	17060	16160	17900	17160	15400	14570	15300
24	15310	15170	15910	16610	17320	17040	16160	17890	17140	15350	14570	15610
25	15280	15180	15940	16660	17340	17020	16120	17850	17080	15280	14570	15840
26	15240	15200	15970	16670	17370	17000	16080	17810	17030	15270	14560	16420
27	15210	15190	15990	16680	17440	17020	16050	17770	16960	15190	14560	17740
28	15180	15200	16030	16700	17470	17000	16030	17720	16900	15140	14540	25550
29	15150	15220	16050	16740	17470	16950	15990	17680	16830	15100	14570	38640
30	15110	15240	16080	16750	---	16920	15960	17640	16770	15040	14540	36750
31	15060	---	16110	16760	---	16890	---	17600	---	14990	14530	---
MAX	16210	15240	16110	16760	17470	17510	16870	17900	17550	16720	14920	38640
MIN	15060	14890	15260	16130	16790	16890	15960	15630	16770	14990	14530	14500
(†)	2057.26	2057.44	2058.28	2058.89	2059.54	2059.01	2058.14	2059.66	2058.90	2057.19	2056.73	2073.10
(‡)	-1200	+180	+870	+650	+710	-580	-930	+1640	-830	-1780	-460	+22220
(††)	142	103	104	101	112	128	163	163	210	285	216	149

CAL YR 1979 MAX 18500 MIN 14890 ‡ +810 †† 1720
WTR YR 1980 MAX 38640 MIN 14500 ‡ +20490 †† 1880

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal use.

08123000 LAKE COLORADO CITY NEAR COLORADO CITY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
OCT									
30...	1225	3120	21.0	730	590	130	98	380	6.1

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
OCT								
30...	13	170	0	790	470	1.1	5.6	1970

08123600 CHAMPION CREEK RESERVOIR NEAR COLORADO CITY, TX

LOCATION.--Lat 32°16'53", long 100°51'30", Mitchell County, Hydrologic Unit 12080002, in service outlet structure at Champion Creek Dam on Champion Creek, 0.9 mi (1.4 km) upstream from mouth, 4.8 mi (7.7 km) downstream from State Highway 208, and 7.2 mi (11.6 km) south of Colorado City.

DRAINAGE AREA.--203 mi^2 (526 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1959 to current year.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Sept. 29, 1959, nonrecording gage at same site and datum.

REMARKS.--The reservoir is formed by a rolled earthfill dam about 6,800 ft (2,070 m) long. The dam was completed on Apr. 30, 1959. Closure and storage began in February 1959. The capacity curve is based on Geological Survey topographic map surveyed in 1950; excavation for borrow, estimated not to exceed 1,200 acre-ft (1.23 hm^3), is not included. The dam and reservoir are owned and operated by the Texas Electric Service Company. Water may be pumped from the reservoir through a 24-inch (610 mm) pipeline to Lake Colorado City (station 08123000) for municipal use and for cooling operations of a steam generating powerplant. There are two spillways. The uncontrolled emergency spillway is 450 ft (137 m) wide by 1,800 ft (549 m) long, and is located at the right end of dam. The controlled service spillway, a cut channel 50 ft (15 m) wide, about 1,800 ft (549 m) long, and 8 ft (2 m) deep, is cut into the emergency spillway at the extreme right end. There is a controlled drop-inlet structure, 4.0 by 5.0 ft (1.2 by 1.5 m), with a side opening of 1.5 by 3.0 ft (0.5 by 0.9 m). Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	2,109.0	-
Design flood	2,104.1	90,020
Crest of spillway	2,091.0	56,800
Crest of spillway (top of conservation pool)	2,083.0	42,500
Lowest gated outlet (invert)	2,020.0	800

COOPERATION.--Record of diversions into Lake Colorado City was furnished by the Texas Electric Service Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 27,910 acre-ft (34.4 hm^3) June 19, 1966, elevation, 2,071.98 ft (631.540 m); minimum, 1,600 acre-ft (1.97 hm^3) Oct. 1, 1959, elevation, 2,025.90 ft (617.494 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 21,230 acre-ft (26.2 hm^3) Sept. 30, elevation, 2,065.41 ft (629.537 m); minimum, 4,490 acre-ft (5.54 hm^3) Sept. 9, elevation, 2,038.23 ft (621.253 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

2,038.0	4,420	2,058.0	15,000
2,048.0	8,680	2,066.0	21,780

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10360	10060	8960	7710	6500	5360	5230	5110	5280	6290	5870	4770
2	10340	10060	8910	7670	6460	5320	5220	5110	5270	6270	5860	4710
3	10320	10050	8870	7620	6420	5270	5220	5110	5260	6250	5840	4700
4	10310	10050	8830	7580	6390	5240	5220	5110	5250	6230	5840	4660
5	10300	10050	8790	7540	6340	5220	5210	5110	5280	6220	5820	4610
6	10280	10030	8740	7500	6300	5220	5210	5120	5230	6210	5790	4560
7	10270	10030	8700	7440	6270	5220	5200	5120	5220	6190	5750	4540
8	10260	10030	8640	7390	6230	5220	5200	5110	5250	6180	5690	4500
9	10240	9980	8600	7350	6190	5230	5200	5100	5240	6170	5650	14620
10	10230	9930	8560	7320	6150	5230	5190	5100	5240	6160	5590	14880
11	10220	9880	8530	7270	6120	5230	5190	5090	5280	6140	5550	14890
12	10220	9820	8530	7220	6080	5230	5180	5080	5280	6130	5500	14870
13	10200	9780	8490	7180	6050	5230	5170	5080	5270	6110	5450	14820
14	10190	9730	8470	7130	6010	5230	5170	5080	5260	6090	5390	14760
15	10220	9690	8430	7090	5980	5230	5170	5230	5250	6080	5340	14710
16	10220	9650	8370	7070	5930	5230	5170	5340	5240	6070	5300	14670
17	10220	9610	8330	7040	5890	5230	5160	5350	5230	6050	5430	14590
18	10210	9560	8280	6990	5850	5230	5160	5350	5220	6030	5450	14550
19	10200	9530	8250	6980	5810	5230	5150	5350	5250	6030	5420	14500
20	10190	9490	8210	6970	5770	5220	5150	5350	5240	6010	5370	14430
21	10180	9440	8170	6960	5730	5220	5150	5350	5310	6000	5310	14370
22	10160	9380	8120	6940	5690	5220	5140	5350	6380	5990	5260	14320
23	10150	9340	8090	6900	5650	5220	5140	5350	6390	5980	5210	16540
24	10140	9290	8040	6850	5610	5220	5140	5340	6380	5970	5160	16690
25	10130	9240	8000	6820	5570	5210	5130	5340	6370	5950	5110	16710
26	10120	9180	7960	6770	5530	5210	5130	5330	6360	5940	5060	17450
27	10120	9140	7920	6720	5490	5230	5120	5320	6340	5930	5010	17640
28	10110	9100	7880	6680	5450	5230	5120	5310	6330	5920	4960	19770
29	10100	9040	7840	6630	5420	5230	5120	5300	6310	5910	4920	21090
30	10090	9000	7790	6600	---	5230	5120	5300	6300	5900	4870	21230
31	10080	---	7750	6550	---	5230	---	5290	---	5880	4810	---
MAX	10360	10060	8960	7710	6500	5360	5230	5350	6390	6290	5870	21230
MIN	10080	9000	7750	6550	5420	5210	5120	5080	5220	5880	4810	4500
(†)	2050.61	2048.62	2046.19	2043.72	2040.94	2040.41	2040.10	2040.57	2043.16	2042.15	2039.22	2065.41
(‡)	-290	-1080	-1250	-1200	-1130	-190	-110	+170	+1010	-420	-1070	+16420
(††)	0	1020	1480	1300	1380	208	0	0	0	0	669	1280

CAL YR 1979 MAX 10940 MIN 5510 ‡ 1490 †† 3920
WTR YR 1980 MAX 21230 MIN 4500 ‡ 10860 †† 7340

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, into Lake Colorado City.

08123600 CHAMPION CREEK RESERVOIR NEAR COLORADO CITY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
OCT 30...	1000	1090	19.0	400	260	84	45	82	1.8

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
OCT 30...	9.4	160	0	300	88	.7	4.9	693

08123800 BEALS CREEK NEAR WESTBROOK, TX

LOCATION.--Lat 32°11'57", long 101°00'49", Mitchell County, Hydrologic Unit 12080007, on left bank at downstream side of bridge on State Highway 163, 2.1 mi (3.4 km) downstream from Hackberry Creek, 10.8 mi (17.4 km) south of Westbrook, 15.7 mi (25.3 km) southwest of Colorado City, and 19.9 mi (32.0 km) upstream from mouth.

DRAINAGE AREA.--9,903 mi^2 (25,648 km^2), of which 8,930 mi^2 (23,130 km^2) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1958 to current year.

REVISED RECORDS.--WRD TX-72-1: 1971.

GAGE.--Water-stage recorder. Datum of gage is 2,048.74 ft (624.456 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Low flow is affected by diversion upstream from station.

AVERAGE DISCHARGE.--22 years, 24.8 ft^3/s (0.702 m^3/s), 0.35 in/yr (9 mm/yr), 17,970 acre-ft/yr (22.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,780 ft^3/s (249 m^3/s) May 19, 1961, gage height, 21.65 ft (6.599 m); maximum gage height, 21.94 ft (6.687 m) Sept. 29, 1980; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1908, about 24.5 ft (7.47 m) in 1922, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 900 ft^3/s (25.5 m^3/s) and maximum (*):

Date	Time	Discharge		Gage height		Date	Time	Discharge		Gage height	
		(ft^3/s)	(m^3/s)	(ft)	(m)			(ft^3/s)	(m^3/s)	(ft)	(m)
Sept. 9	1700	5,700	161	20.74	6.322	Sept. 26	2300	2,080	58.9	14.30	4.359
Sept. 25	1000	1,740	49.3	12.97	3.953	Sept. 29	0600	*7,690	218	21.94	6.687

Mimimum discharge, 0.04 ft^3/s (0.001 m^3/s) Aug. 5, 11, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	17	2.4	4.5	5.0	3.7	2.3	1.9	4.6	2.9	.32	2.1
2	1.5	3.4	2.8	4.3	4.9	3.7	2.2	1.2	4.5	2.6	.23	1.9
3	1.4	2.0	3.1	4.2	5.0	3.7	2.3	2.5	4.4	2.1	.29	1.7
4	1.4	1.8	3.5	4.1	5.0	3.5	2.4	3.1	3.8	1.5	.17	3.4
5	1.4	1.8	3.4	4.0	4.9	4.0	2.3	3.1	3.6	1.4	.07	3.7
6	1.3	1.8	2.9	3.9	4.7	3.9	2.0	4.7	3.2	1.4	.26	2.4
7	1.5	2.0	3.0	4.0	5.1	3.7	2.1	11	3.1	1.2	.24	5.7
8	1.5	2.3	3.2	3.9	5.3	3.9	2.3	9.0	14	.89	.16	4.6
9	1.3	2.6	3.2	3.8	5.2	4.0	2.3	7.6	54	.62	.12	1740
10	1.1	4.3	3.3	3.9	5.4	3.9	1.9	4.7	16	.54	.09	1260
11	.95	2.4	3.6	4.6	7.4	4.2	2.1	3.3	24	.54	.05	423
12	.95	2.1	5.6	3.5	7.2	3.6	2.6	2.8	32	.69	.26	521
13	1.3	2.1	5.5	3.7	5.9	4.4	2.8	3.0	26	.86	.58	358
14	1.5	2.1	21	4.1	5.1	3.8	2.7	3.2	8.9	.79	.56	102
15	2.3	2.3	22	4.1	4.9	3.3	3.3	57	6.5	.54	.46	46
16	2.2	2.3	14	3.9	4.6	3.3	3.5	574	5.1	.44	.66	35
17	2.4	2.4	7.2	4.1	4.5	3.3	2.8	445	3.8	.32	9.3	30
18	3.6	2.4	5.9	4.1	4.6	3.3	2.7	100	1.4	.25	38	24
19	2.5	2.9	5.1	4.0	4.6	3.0	2.1	45	2.9	.52	156	21
20	2.0	2.7	5.0	4.0	5.4	2.8	2.2	23	508	.54	52	16
21	2.5	2.4	5.1	4.1	4.5	2.8	2.3	59	48	.42	19	14
22	2.1	2.8	4.9	5.3	4.0	2.8	2.3	510	500	.18	11	12
23	1.7	2.4	5.0	8.9	4.0	2.2	2.1	79	133	.24	7.3	381
24	1.2	2.2	5.2	21	4.1	2.6	2.1	25	13	.45	5.2	886
25	1.3	2.1	20	7.9	4.1	2.7	2.5	14	9.7	.39	4.1	1130
26	2.0	2.2	7.3	6.3	4.1	2.6	3.5	9.9	6.8	.70	3.8	1300
27	1.8	2.4	5.6	5.7	3.8	3.2	4.5	7.6	5.5	.56	3.1	1130
28	2.0	2.3	5.2	5.4	3.9	4.1	2.6	6.2	4.1	.39	2.9	3370
29	2.0	2.2	5.2	5.2	3.9	3.1	2.2	5.4	3.1	.19	2.8	5890
30	8.8	2.3	5.3	5.2	---	2.9	2.0	4.9	2.8	.34	2.5	1700
31	35	---	5.0	4.9	---	2.7	---	4.6	---	.29	2.4	---
TOTAL	93.80	86.0	199.5	160.6	141.1	104.7	75.0	2030.7	1455.8	24.79	323.92	20414.5
MEAN	3.03	2.87	6.44	5.18	4.87	3.38	2.50	65.5	48.5	.80	10.4	680
MAX	35	17	22	21	7.4	4.4	4.5	574	508	2.9	156	5890
MIN	.95	1.8	2.4	3.5	3.8	2.2	1.9	1.2	1.4	.18	.05	1.7
CFSM	.003	.003	.007	.005	.005	.003	.003	.07	.05	.001	.01	.70
IN.	.00	.00	.01	.01	.01	.00	.00	.08	.06	.00	.01	.78
AC-FT	186	171	396	319	280	208	149	4030	2890	49	642	40490

CAL YR 1979 TOTAL 6031.71 MEAN 16.5 MAX 1370 MIN .11 CFSM .02 IN .23 AC-FT 11960
WTR YR 1980 TOTAL 25110.41 MEAN 68.6 MAX 5890 MIN .05 CFSM .07 IN .96 AC-FT 49810

08123800 BEALS CREEK NEAR WESTBROOK, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: November 1958 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1958 to current year.
WATER TEMPERATURES: November 1958 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 22,800 micromhos June 2, 1969; minimum daily, 219 micromhos Sept. 13, 1964.
WATER TEMPERATURES: Maximum daily, 37.0°C June 28, 1960, and July 3, 1976; minimum daily, 0.0°C Jan. 7, 1971, and Jan. 9, 1973.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 19,200 micromhos July 24; minimum daily, 322 micromhos Sept. 9.
WATER TEMPERATURES: Maximum daily, 33.0°C July 10, 17; minimum daily, 2.0°C Dec. 17, 18, Jan. 31.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
OCT 22...	1100	2.2	7950	7.7	16.0	1600	1400	230	250	1200
NOV 30...	1100	2.0	9230	--	4.0	2100	1900	310	320	1400
JAN 31...	0950	5.2	8570	--	2.0	1700	1600	220	280	1400
FEB 29...	1030	3.9	14500	--	16.0	3300	3100	360	580	2200
MAR 31...	1030	2.9	12200	--	15.0	2700	2500	360	430	2000
MAY 31...	0810	4.6	9680	8.4	25.0	2200	2000	320	340	1400
JUN 30...	1100	2.6	7440	--	28.0	1600	1500	250	240	1100
JUL 11...	1340	.56	14400	--	34.0	3200	3100	370	550	2300
SEP 28...	1835	5920	293	--	14.0	88	18	27	5.1	24

DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
OCT 22...	13	36	210	0	1300	2000	.8	.6	5120
NOV 30...	13	45	200	0	1500	2400	.9	2.2	6080
JAN 31...	15	31	170	0	1400	2300	.5	7.4	5720
FEB 29...	17	55	240	0	2400	3900	.8	13	9630
MAR 31...	17	66	240	0	1800	3400	1.2	9.4	8190
MAY 31...	13	33	260	0	1400	2600	.7	2.0	6220
JUN 30...	12	38	160	0	1000	2000	.5	4.0	4710
JUL 11...	18	50	80	0	2200	4400	.6	12	9920
SEP 28...	1.1	3.9	83	0	24	43	.2	8.5	175

08123800 BEALS CREEK NEAR WESTBROOK, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	93.80	10100	6620	1680	2700	675	1600	406	*
NOV.	1979	86.0	8990	5870	1360	2300	545	1400	328	2000
DEC.	1979	199.5	10300	6780	3650	2700	1470	1600	885	*
JAN.	1980	160.6	13500	9130	3960	3700	1620	2200	971	*
FEB.	1980	141.1	14300	9730	3710	4000	1520	2400	911	*
MAR.	1980	104.7	12500	8410	2380	3400	968	2100	580	*
APR.	1980	75.0	12800	8580	1740	3500	708	2100	424	*
MAY	1980	2030.7	1920	1190	6540	460	2520	280	1530	410
JUNE	1980	1455.8	1890	1190	4670	460	1810	280	1100	410
JULY	1980	24.79	13100	8880	595	3600	244	2200	146	*
AUG.	1980	323.92	4670	2960	2590	1200	1010	700	614	1000
SEPT	1980	20414.5	759	461	25400	170	9620	110	5880	160
TOTAL		25110.41	**	**	58300	**	22700	**	13800	**
WTD. AVG.		69	1360	860	**	340	**	200	**	290

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9070	9510	9170	10000	8970	14300	12600	13900	10100	8600	17800	10100
2	9000	8650	9000	9520	10500	14400	11900	13200	10800	9330	17800	10700
3	8980	8280	8860	10400	12900	14200	12200	12400	11100	10100	17100	11000
4	8930	8120	9180	12100	14900	12800	12400	11800	11600	10600	17200	11300
5	8880	6760	9740	13700	16800	13200	12300	11700	12100	10900	17300	12100
6	8930	3500	9980	16200	16600	13700	12400	11600	12700	11400	17200	12200
7	9160	2700	9590	16500	15800	13500	12500	7120	13300	12000	17000	11000
8	9240	3420	9210	17000	15500	13100	12700	9500	10200	12700	16900	7120
9	9250	5350	9180	19100	14800	12900	12800	10900	5000	13300	16800	322
10	9130	7440	9290	17500	15000	12700	12600	10200	1990	14000	17000	494
11	9070	9090	9280	15800	14800	12600	12900	9850	1280	14300	17000	2180
12	9010	12800	8580	15900	14500	12300	13000	9690	8210	14700	16700	993
13	9250	14600	8540	16300	13500	12200	13100	7430	6010	15200	15700	1530
14	9320	12400	8370	16000	14300	12100	13200	5470	8610	15700	15000	2270
15	8770	10300	8410	15900	13500	11800	12900	947	8840	16100	14600	3020
16	8570	9390	7500	15300	13600	11900	12600	831	7410	16600	14400	4300
17	8440	9060	6650	15100	14000	11900	12500	1540	7250	17200	11200	4780
18	8350	8850	7690	14800	14200	12000	12500	2550	6960	17400	7820	5550
19	8150	8780	8120	14700	15100	12200	12600	3640	7080	18200	2700	6320
20	8080	8760	9700	14100	15800	12000	12300	4450	1150	18300	4090	6640
21	8000	9600	10200	14300	13300	11900	12200	5150	880	18700	4990	6990
22	7980	10900	10500	13100	12800	12000	12400	1110	692	19000	5190	7230
23	7950	11600	9870	14100	13800	12100	12500	2340	1210	19100	5900	805
24	7970	10400	9490	10700	14600	12300	12300	4610	2550	19200	6650	713
25	7950	9820	12500	12500	14500	11600	12100	6430	3770	19000	7070	600
26	7900	9440	15000	12600	14800	11100	12200	6810	4260	18900	7470	827
27	7850	9300	17500	13700	15400	12000	13000	7660	4730	18200	7750	1290
28	7760	9180	16300	14700	15000	11300	13900	7750	5330	18000	8230	674
29	7740	9170	16000	12700	14900	12100	15700	7890	6500	17800	8600	519
30	8500	9210	16600	10300	---	12300	14900	8740	7440	17600	9110	802
31	12700	---	13000	8580	---	12400	---	9630	---	17900	9590	---
MEAN	8710	8880	10400	14000	14300	12500	12800	7320	6640	15500	12000	4810

08123800 BEALS CREEK NEAR WESTBROOK, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.0	11.0	4.0	10.0	3.0	5.0	13.0	19.0	28.0	30.0	26.0	26.0
2	20.0	10.0	---	12.0	---	---	22.0	19.0	25.0	29.0	26.0	30.0
3	23.0	12.0	5.0	8.0	12.0	7.0	23.0	20.0	25.0	27.0	---	27.0
4	19.0	17.0	6.0	7.0	9.0	12.0	16.0	23.0	26.0	27.0	27.0	25.0
5	18.0	16.0	8.0	7.0	9.0	15.0	20.0	26.0	27.0	26.0	27.0	25.0
6	19.0	12.0	10.0	11.0	9.0	11.0	20.0	22.0	27.0	27.0	30.0	26.0
7	25.0	13.0	10.0	6.0	11.0	13.0	18.0	29.0	27.0	28.0	---	27.0
8	22.0	13.0	10.0	6.0	8.0	14.0	15.0	21.0	---	28.0	32.0	24.0
9	20.0	16.0	9.0	6.0	3.0	---	15.0	20.0	24.0	27.0	28.0	23.0
10	16.0	11.0	11.0	12.0	5.0	15.0	17.0	22.0	24.0	33.0	29.0	26.0
11	22.0	14.0	15.0	9.0	6.0	14.0	23.0	27.0	23.0	26.0	25.0	27.0
12	19.0	15.0	8.0	8.0	5.0	14.0	12.0	22.0	26.0	28.0	30.0	25.0
13	17.0	9.0	8.0	---	13.0	---	---	20.0	26.0	30.0	31.0	26.0
14	21.0	8.0	6.0	11.0	15.0	12.0	12.0	20.0	25.0	32.0	27.0	29.0
15	21.0	8.0	8.0	12.0	15.0	16.0	15.0	20.0	30.0	28.0	31.0	26.0
16	20.0	9.0	5.0	12.0	7.0	18.0	15.0	18.0	27.0	28.0	31.0	28.0
17	20.0	12.0	2.0	12.0	---	12.0	18.0	21.0	27.0	33.0	26.0	23.0
18	21.0	16.0	2.0	12.0	5.0	15.0	15.0	---	28.0	30.0	26.0	24.0
19	22.0	17.0	6.0	14.0	12.0	13.0	18.0	24.0	31.0	32.0	25.0	29.0
20	22.0	19.0	10.0	10.0	14.0	14.0	28.0	23.0	17.0	26.0	27.0	25.0
21	26.0	---	10.0	9.0	16.0	14.0	20.0	23.0	27.0	31.0	30.0	24.0
22	17.0	12.0	14.0	7.0	18.0	15.0	20.0	18.0	25.0	29.0	27.0	25.0
23	14.0	8.0	14.0	5.0	12.0	19.0	22.0	21.0	27.0	30.0	28.0	20.0
24	14.0	9.0	9.0	6.0	10.0	13.0	25.0	23.0	27.0	32.0	30.0	20.0
25	13.0	8.0	---	8.0	10.0	18.0	18.0	29.0	28.0	28.0	27.0	21.0
26	15.0	8.0	11.0	6.0	10.0	15.0	16.0	24.0	28.0	27.0	30.0	21.0
27	17.0	9.0	11.0	5.0	14.0	17.0	---	24.0	28.0	30.0	27.0	20.0
28	20.0	7.0	11.0	5.0	14.0	14.0	18.0	23.0	26.0	32.0	31.0	17.0
29	18.0	4.0	9.0	3.0	16.0	15.0	25.0	25.0	---	25.0	27.0	18.0
30	18.0	4.0	10.0	5.0	---	21.0	21.0	26.0	28.0	27.0	29.0	20.0
31	13.0	---	7.0	2.0	---	15.0	---	25.0	---	32.0	31.0	---
MEAN	19.5	11.5	8.5	8.0	10.5	14.0	18.5	22.5	26.5	29.0	28.5	24.0

08123850 COLORADO RIVER ABOVE SILVER, TX
(National stream-quality accounting network)

LOCATION.--Lat 32°03'37", long 100°45'56", Coke County, Hydrologic Unit 12080008, on right bank 25 ft (7.6 m) downstream from a Pan American Oil Co. bridge, 4.7 mi (7.6 km) west of Silver, and at mile 756.6 (1,217.3 km).

DRAINAGE AREA.--15,407 mi² (39,904 km²), of which 11,600 mi² (30,000 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,907.66 ft (581.455 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 4, 1972, water-stage recorder at site 0.5 mi (0.8 km) downstream at same datum.

REMARKS.--Water-discharge records good. Low flow is affected by upstream diversions, see stations 08121000 and 08123650. Some regulation by Lake J. B. Thomas, Lake Colorado City, and Champion Creek Reservoir (see stations 08118000, 08123000, and 08123600).

AVERAGE DISCHARGE.--13 years, 70.8 ft³/s (2.005 m³/s), 51,290 acre-ft/yr (63.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,900 ft³/s (535 m³/s) Sept. 9, 1980, gage height, 22.73 ft (6.928 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18,900 ft³/s (535 m³/s) Sept. 9 at 1430 hours, gage height, 22.73 ft (6.928 m); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	1.5	2.4	6.7	6.6	3.3	2.7	2.9	19	14	.00	.67
2	.68	7.6	2.4	7.3	5.8	5.5	2.8	1.9	17	13	.00	.24
3	.40	9.0	2.8	5.9	6.2	7.1	1.9	2.1	16	11	.00	.09
4	.40	9.2	2.8	5.8	6.4	6.6	1.7	3.6	14	9.4	.00	.03
5	.40	5.6	3.0	5.8	5.5	5.8	2.3	2.9	13	7.1	.00	.02
6	.40	4.1	3.0	6.1	6.6	6.1	2.4	2.4	11	5.6	.00	.00
7	.40	4.0	4.4	5.1	7.7	5.0	2.0	4.6	9.6	3.7	.00	.00
8	.30	3.7	4.4	5.1	6.3	5.3	1.7	7.3	13	3.3	.00	.00
9	.15	3.3	4.4	5.1	7.6	5.1	2.4	12	27	2.8	.00	9220
10	.22	3.6	5.1	6.6	8.1	4.8	2.8	11	63	2.4	.00	4370
11	.25	4.6	5.1	5.8	9.0	6.0	2.8	9.2	59	2.0	.00	3610
12	.44	6.0	7.3	5.1	8.1	5.6	2.8	6.2	107	1.7	.00	1040
13	.26	6.9	9.8	5.8	12	5.1	2.4	3.8	156	1.1	.00	568
14	.36	5.6	13	5.8	11	6.9	2.0	3.1	93	.68	.00	255
15	1.2	4.4	23	5.1	8.0	6.6	1.4	7.2	59	.52	.00	108
16	1.4	4.4	24	5.1	3.9	7.6	1.9	281	42	.29	.00	71
17	2.4	5.1	24	5.1	5.1	4.0	.94	5340	31	.11	.03	56
18	3.0	5.8	14	6.6	5.8	4.3	1.4	4580	25	.07	292	50
19	2.8	5.8	11	5.8	5.7	3.8	2.2	945	21	.05	40	44
20	2.9	7.3	10	5.1	5.5	2.7	2.3	232	34	.03	42	39
21	2.8	5.8	8.9	5.1	4.9	3.9	2.2	97	433	.03	100	34
22	1.4	4.4	8.1	8.1	5.2	3.9	2.2	195	87	.05	43	31
23	1.4	4.4	7.2	9.0	5.1	2.7	2.0	390	153	.05	24	1410
24	1.5	4.4	6.6	10	4.6	2.2	2.6	81	206	.03	15	816
25	1.4	3.8	7.0	27	4.1	2.8	1.6	51	53	.03	10	1130
26	1.7	5.1	16	17	5.6	2.8	1.4	40	23	.02	7.4	1840
27	1.2	2.8	16	11	5.8	3.2	1.4	34	21	.02	5.6	2240
28	.88	2.4	13	9.5	6.0	9.8	1.4	30	20	.01	3.8	2270
29	1.4	2.4	10	7.4	5.1	4.5	4.2	26	18	.01	2.9	10500
30	2.6	2.4	7.4	7.1	---	4.4	4.0	23	16	.01	2.5	15900
31	1.5	---	7.1	6.6	---	5.4	---	20	---	.00	1.9	---
TOTAL	37.24	145.4	283.2	232.6	187.3	152.8	65.84	12445.2	1859.6	79.11	591.33	55603.05
MEAN	1.20	4.85	9.14	7.50	6.46	4.93	2.19	401	62.0	2.55	19.1	1853
MAX	3.0	9.2	24	27	12	9.8	4.2	5340	433	14	292	15900
MIN	.15	1.5	2.4	5.1	3.9	2.2	.94	1.9	9.6	.00	.00	.00
AC-FT	74	288	562	461	372	303	131	24690	3690	157	1170	110300

CAL YR 1979 TOTAL 19899.97 MEAN 54.5 MAX 2700 MIN .10 AC-FT 39470
WTR YR 1980 TOTAL 71682.67 MEAN 196 MAX 15900 MIN .00 AC-FT 142200

08123850 COLORADO RIVER ABOVE SILVER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: December 1967 to current year. Pesticide analyses: October 1970 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 1967 to current year.
WATER TEMPERATURES: December 1967 to current year.

INSTRUMENTATION.--Specific conductance is recorded continuously at this station.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 14,500 micromhos Dec. 30, 1978; minimum daily, 235 micromhos Aug. 10, 1974.
WATER TEMPERATURES (1967-1979): Maximum daily, 30.0°C Aug. 10, 14, 1979; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 13,800 micromhos Nov. 3; minimum daily, 255 micromhos Sept. 9.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 02...	1100	1.1	5260	7.5	20.0	45	6.4	85	10	61	460
NOV 06...	0950	5.1	13500	8.2	12.5	11	10.5	108	10	82	70
DEC 04...	1030	5.8	7000	8.1	6.0	6.0	12.3	106	6.5	K3	K12
JAN 22...	1200	16	9680	8.6	6.0	19	14.3	127	7.0	--	85
FEB 19...	1045	9.0	11350	8.7	11.0	19	13.8	139	13	30	35
MAR 18...	1035	5.1	12000	8.7	12.0	17	15.7	160	9.3	K1	190
APR 15...	1100	1.4	11900	8.8	20.0	18	13.9	167	6.8	K4	30
MAY 20...	1100	228	2600	7.6	21.0	480	6.8	82	3.0	480	3500
JUN 03...	1045	18	6900	8.1	24.0	60	8.6	112	4.8	88	360
JUL 16...	1400	.30	5820	8.8	30.0	21	10.6	151	12	130	46
AUG 19...	1115	10	1012	7.5	25.0	130	7.8	100	4.2	1100	880
SEP 16...	1100	72	2600	7.6	24.5	80	8.6	109	2.3	1500	1000

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 02...	1400	1300	340	130	600	7.0	17	98	0	1100	1100
NOV 06...	2900	2800	450	440	1900	15	42	130	0	2300	3400
DEC 04...	1600	1400	330	180	900	9.9	24	180	0	1200	1400
JAN 22...	2200	2000	340	320	1500	14	2.5	160	14	1800	2500
FEB 19...	2400	2300	310	400	1700	15	28	120	22	2000	2900
MAR 18...	2900	2800	450	440	2000	16	38	74	22	2400	3400
APR 15...	2800	2700	500	380	1800	15	33	58	12	2400	3000
MAY 20...	500	390	130	42	360	7.0	10	140	0	340	580
JUN 03...	1400	1300	300	160	1100	13	16	160	0	1100	1700
JUL 16...	1300	1200	290	130	860	11	18	48	6	1000	1300
AUG 19...	260	190	74	19	93	2.5	7.8	84	0	170	160
SEP 16...	520	400	120	53	320	6.1	8.3	140	0	340	540

08123850 COLORADO RIVER ABOVE SILVER, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 02...	.6	5.2	3590	3340	.00	.040	.02	--	.080	--	1.3
NOV 06...	.5	3.5	9650	8600	--	--	.02	.02	.250	.100	2.1
DEC 04...	.6	2.5	4360	4130	--	--	.01	.01	.130	.050	.74
JAN 22...	.5	.4	6770	6560	--	--	.02	.01	.040	.040	.64
FEB 19...	.7	.1	7680	7420	--	--	.03	.02	.040	.030	1.8
MAR 18...	.6	.1	8840	8790	--	--	.02	.01	.180	.120	1.6
APR 15...	.6	1.9	8880	8160	--	--	.01	.01	.230	.080	1.9
MAY 20...	.4	11	1550	1540	--	--	.60	.34	.220	.090	1.2
JUN 03...	.3	3.6	4670	4470	--	--	.01	.01	.010	.010	1.4
JUL 16...	.7	15	4040	3640	--	--	.04	.04	.140	.060	2.4
AUG 19...	.3	6.7	572	574	--	--	.41	.39	.220	.220	1.1
SEP 16...	.4	8.9	1560	1460	--	--	.40	.27	.040	.020	1.3

DATE	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	CARBON, ORGANIC SUSPENDED (MG/L AS C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 02...	--	1.4	1.1	.130	.010	--	6.8	4.3	73	.22	99
NOV 06...	1.6	2.3	1.7	.070	.010	25	--	--	31	.43	99
DEC 04...	.77	.87	.82	.030	.010	8.7	--	--	16	.25	97
JAN 22...	.96	.68	1.0	.280	.040	13	--	--	34	1.5	98
FEB 19...	.85	1.8	.88	.550	.250	--	16	1.3	41	1.0	100
MAR 18...	1.1	1.8	1.2	.210	.070	18	--	--	27	.37	97
APR 15...	2.1	2.1	2.2	.180	.050	16	--	--	27	.10	99
MAY 20...	1.2	1.4	1.3	.230	.170	16	--	--	896	552	74
JUN 03...	.86	1.4	.87	.160	.010	--	7.4	4.7	85	4.3	100
JUL 16...	1.0	2.5	1.1	.160	.020	19	--	--	58	.05	98
AUG 19...	1.3	1.3	1.5	.150	.040	--	8.3	1.1	126	3.6	99
SEP 16...	.92	1.3	.94	.240	.140	7.8	--	--	85	17	100

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUSPENDED TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)
OCT 02...	1100	3	0	3	200	0	300	0	0	1	10
NOV 06...	0950	--	--	--	--	--	--	--	--	--	--
FEB 19...	1045	5	1	4	400	300	100	2	2	0	20
MAR 18...	1035	--	--	--	--	--	--	--	--	--	--
JUN 03...	1045	5	1	4	600	200	400	0	0	0	20
JUL 16...	1400	--	--	--	--	--	--	--	--	--	--
AUG 19...	1115	3	0	3	200	100	100	0	--	<1	0
SEP 16...	1100	--	--	--	--	--	--	--	--	--	--

08123850 COLORADO RIVER ABOVE SILVER, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)
OCT 02...	10	0	0	0	0	1	1	0	1200	--	10
NOV 06...	--	--	--	--	--	--	--	--	--	--	--
FEB 19...	20	0	0	0	0	5	5	0	440	400	40
MAR 18...	--	--	--	--	--	--	--	--	--	--	--
JUN 03...	20	0	5	5	0	9	0	20	1500	610	890
JUL 16...	--	--	--	--	--	--	--	--	--	--	--
AUG 19...	0	0	3	--	<3	5	4	1	2600	2600	20
SEP 16...	--	--	--	--	--	--	--	--	--	--	--

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI)
OCT 02...	4	4	0	490	370	120	.2	.0	.4	--	--
NOV 06...	--	--	--	--	--	--	--	--	--	--	--
FEB 19...	0	0	3	120	40	80	.2	.0	.2	4	4
MAR 18...	--	--	--	--	--	--	--	--	--	--	--
JUN 03...	8	8	0	300	260	40	.0	.0	.1	11	5
JUL 16...	--	--	--	--	--	--	--	--	--	--	--
AUG 19...	5	5	0	180	140	40	.0	.0	.0	10	10
SEP 16...	--	--	--	--	--	--	--	--	--	--	--

DATE	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 02...	--	0	0	0	0	0	0	10	0	30
NOV 06...	--	--	--	--	0	--	--	--	--	--
FEB 19...	0	1	0	1	0	0	0	20	10	10
MAR 18...	--	--	--	--	0	--	--	--	--	--
JUN 03...	6	1	0	1	3	3	0	50	20	30
JUL 16...	--	--	--	--	0	--	--	--	--	--
AUG 19...	0	0	0	0	0	0	0	20	--	<3
SEP 16...	--	--	--	--	0	--	--	--	--	--

08123850 COLORADO RIVER ABOVE SILVER, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	PCB TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
OCT									
02...	1100	.00	--	.00	.0	.00	.00	.00	.00
FEB									
19...	1045	.00	.00	.00	.0	.00	.00	.00	.00
JUN									
03...	1045	.00	.00	.00	.0	.00	.00	.00	.03
AUG									
19...	1115	.00	.00	.00	.0	.00	.00	.00	.02

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
OCT									
02...	.00	.00	.00	.00	.00	.00	.00	.00	.00
FEB									
19...	.00	.00	.00	.00	.00	.00	.00	.00	.00
JUN									
03...	.00	.00	.00	.00	.00	.00	.00	.00	.00
AUG									
19...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
OCT									
02...	.00	.00	.00	.00	0	.00	.00	.00	.00
FEB									
19...	.00	.00	.00	.00	0	.00	.01	.00	.00
JUN									
03...	.00	.00	.00	.00	0	.00	.03	.00	.00
AUG									
19...	.00	.00	.00	.00	0	.00	.07	.23	.00

DATE	LENGTH OF EXPO-SURE (DAYS)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS)
OCT						
02...	28	2.44	2.76	8.12	1.82	39.4
MAR						
18...	28	14.8	16.1	16.1	2.12	80.7
APR						
15...	28	27.0	29.4	19.9	2.04	121

08123850 COLORADO RIVER ABOVE SILVER, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE TIME	NOV 6,79 0950		MAR 18,80 1035		MAY 20,80 1100		JUN 3,80 1045	
TOTAL CELLS/ML	86000		27000		2500		86000	
DIVERSITY: DIVISION	0.5		0.7		1.5		1.4	
.CLASS	0.5		0.7		1.5		1.4	
..ORDER	0.8		1.0		1.8		2.0	
...FAMILY	1.2		1.0		2.0		2.9	
....GENUS	1.9		1.2		2.1		3.4	
ORGANISM								
CHLOROPHYTA (GREEN ALGAE)	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...COELASTRACEAE								
....COELASTRUM	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	7000	8	880	3	72	3	1000	1
....DICTYOSPHAERIUM	--	-	1500	6	--	-	5500	6
....KIRCHNERIELLA	--	-	--	-	--	-	*	0
....OOCYSTIS	620	1	--	-	290	11	2700	3
....SELENASTRUM	--	-	660	2	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	690	1
...SCENEDESMACEAE								
....CRUCIGENIA	--	-	--	-	--	-	4100	5
....SCENEDESMUS	*	0	--	-	72	3	4800	6
....TETRASTRUM	--	-	--	-	--	-	--	-
..TETRASPORALES								
...PALMELLACEAE								
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	470	1	--	-	--	-	*	0
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...CHAETOCERACEAE								
....CHAETOCEROS	--	-	--	-	--	-	1700	2
...COSCINODISCACEAE								
....CYCLOTELLA	--	-	22000#	81	290	11	10000	12
....MELOSIRA	--	-	--	-	--	-	690	1
...RHIZOSOLENIACEAE								
....RHIZOSOLENIA	--	-	--	-	--	-	15000#	18
..PENNALES								
...ACHNANTHACEAE								
....COCCONEIS	--	-	--	-	--	-	--	-
...NAVICULACEAE								
....DIPLONEIS	--	-	--	-	--	-	--	-
....ENTOMONEIS	--	-	--	-	--	-	690	1
....NAVICULA	--	-	440	2	140	6	--	-
...NITZSCHIACEAE								
....NITZSCHIA	--	-	880	3	140	6	17000#	20
...SURIRELLACEAE								
....SURIRELLA	--	-	--	-	--	-	3800	4
.XANTHOPHYCEAE								
..HETEROCOCCALES								
...CHLOROTHECIACEAE								
....OPHIOCYTIUM	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	--	-	--	-
....ANACYSTIS	2800	3	660	2	--	-	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	--	-
....ANABAENOPSIS	5300	6	--	-	--	-	--	-
....APHANIZOMENON	3100	4	--	-	--	-	--	-
...OSCILLATORIACEAE								
....LYNGBYA	14000#	17	--	-	--	-	3400	4
....OSCILLATORIA	52000#	60	--	-	1400#	57	14000#	16
....SPIRULINA	--	-	--	-	--	-	--	-
...RIVULARIACEAE								
....RAPHIDIOPSIS	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	220	1	72	3	--	-
....TRACHELOMONAS	--	-	--	-	--	-	*	0
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	780	1	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08123850 COLORADO RIVER ABOVE SILVER, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	JUL 16,80	AUG 19,80	SEP 16,80
TIME	1400	1115	1100
TOTAL CELLS/ML	5400000	20000	32000
DIVERSITY: DIVISION	0.1	1.2	1.7
.CLASS	0.1	1.2	1.7
..ORDER	0.4	2.0	2.1
...FAMILY	1.6	2.6	2.4
....GENUS	2.4	3.0	3.1

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...COELASTRACEAE						
....COELASTRUM	--	-	390	2	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	*	0	690	3	2200	7
....DICTYOSPHAERIUM	*	0	--	-	720	2
....KIRCHNERIELLA	--	-	--	-	540	2
....OOCYSTIS	--	-	200	1	720	2
....SELENASTRUM	--	-	--	-	--	-
....TETRAEDRON	--	-	*	0	--	-
....TREUBARIA	--	-	--	-	--	-
...SCENEDESMACEAE						
....CRUCIGENIA	--	-	--	-	--	-
....SCENEDESMUS	*	0	390	2	1100	3
....TETRASTRUM	--	-	790	4	2900	9
..TETRASPORALES						
...PALMELLACEAE						
....SPHAEROCYSTIS	--	-	--	-	360	1
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	--	-	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...CHAETOCERACEAE						
....CHAETOCEROS	--	-	--	-	--	-
...COSCINODISCACEAE						
....CYCLOTELLA	*	0	1200	6	9200#	29
....MELOSIRA	--	-	340	2	2300	7
...RHIZOSOLENIACEAE						
....RHIZOSOLENIA	--	-	--	-	--	-
..PENNALES						
...ACHNANTHACEAE						
....COCCONEIS	--	-	*	0	--	-
...NAVICULACEAE						
....DIPLONEIS	--	-	*	0	--	-
....ENTOMONEIS	*	0	--	-	--	-
....NAVICULA	*	0	200	1	--	-
...NITZSCHIACEAE						
....NITZSCHIA	*	0	840	4	720	2
...SURIRELLACEAE						
....SURIRELLA	--	-	--	-	--	-
.XANTHOPHYCEAE						
..HETEROCOCCALES						
...CHLOROTHECIACEAE						
....OPHIOCYTIUM	--	-	--	-	180	1
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	--	-	180	1
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....AGMENELLUM	130000	2	5500#	27	1400	5
....ANACYSTIS	230000	4	1500	7	7000#	22
..HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	610000	11	--	-	1800	6
....ANABAENOPSIS	2100000#	38	1300	7	--	-
....APHANIZOMENON	--	-	250	1	--	-
...OSCILLATORIACEAE						
....LYNGBYA	550000	10	--	-	--	-
....OSCILLATORIA	1400000#	27	6100#	30	--	-
....SPIRULINA	64000	1	--	-	--	-
...RIVULARIACEAE						
....RAPHIDIOPSIS	260000	5	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	*	0	250	1	--	-
....TRACHELOMONAS	--	-	*	0	180	1
PYRRHOPHYTA (FIRE ALGAE)						
.DINOPHYCEAE						
..PERIDINIALES						
...GLENODINIACEAE						
....GLENODINIUM	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08123850 COLORADO RIVER ABOVE SILVER, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	37.24	7500	4920	494	1800	182	1400	136	1700
NOV.	1979	145.4	9940	6650	2610	2500	978	1800	723	2200
DEC.	1979	283.2	7820	5110	3910	1900	1440	1400	1080	1700
JAN.	1980	232.6	11200	7560	4750	2900	1790	2100	1320	*
FEB.	1980	187.3	10700	7200	3640	2700	1370	2000	1010	*
MAR.	1980	152.8	12000	8140	3360	3100	1270	2300	935	*
APR.	1980	65.84	11800	8010	1420	3000	540	2200	396	*
MAY	1980	12445.2	1010	631	21200	220	7480	170	5750	220
JUNE	1980	1859.6	3610	2300	11500	820	4140	630	3150	790
JULY	1980	79.11	4620	2930	626	1100	224	800	171	1000
AUG.	1980	591.33	2230	1390	2220	490	783	380	602	480
SEPT	1980	55603.05	603	369	55400	130	19100	99	14900	130
TOTAL		71682.67	**	**	111000	**	39300	**	30200	**
WTD. AVG.		196	916	574	**	200	**	160	**	200

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5100	11900	6700	8550	11500	10900	8940	13100	6800	4040	---	5330
2	5070	12300	6560	9040	12100	11200	8020	13000	6950	4170	---	5010
3	5130	13800	6410	8940	11000	11600	8910	12900	7090	4350	---	5640
4	5190	9430	6680	11000	10600	11400	10500	12500	7100	4470	---	6080
5	5230	13200	7150	11300	10400	11500	11100	13200	7120	4680	---	6000
6	5270	12400	7670	10600	10500	11400	11700	13600	7330	4840	---	---
7	5360	11900	8640	11000	10000	11500	12000	12800	7410	5020	---	---
8	5450	11200	9480	11500	10100	11700	12300	13600	6890	5170	---	---
9	5750	10700	9740	12000	10200	11900	12000	13700	6470	5300	---	255
10	5650	10200	8750	12300	10500	12000	12100	13100	7730	5480	---	473
11	5480	10100	8590	12700	10800	12200	12200	13000	8230	5620	---	466
12	5760	10000	7810	13000	10600	12100	12000	13100	5350	5780	---	885
13	5780	9730	7530	12500	9480	11800	12100	13200	4800	5940	---	1290
14	5730	9340	7260	12300	8940	11700	11900	13400	4950	6090	---	1700
15	5680	8960	7010	12100	8720	12100	11700	13000	5090	6250	---	2110
16	5660	9120	7350	11700	9500	11800	12000	4770	5210	6450	8500	2540
17	5820	8640	7840	10900	10200	12300	12300	545	4700	6780	1430	2900
18	5950	8580	7620	10800	10900	12400	12500	610	3960	6880	1000	3450
19	6080	8500	7790	10400	12400	12600	12400	1000	4290	6940	1110	3790
20	6380	8370	7700	10000	12600	12700	12300	2680	4280	7020	3920	3910
21	6850	8420	7830	9730	12400	12800	12500	3680	2310	7090	2990	4500
22	7450	8950	7800	10500	11800	12900	12200	2670	1500	7130	3440	4840
23	8200	9420	7760	11100	12000	13000	12400	1890	856	7210	3700	749
24	8820	9310	7740	11600	11900	13100	11700	2950	1110	7270	3940	1000
25	9460	9000	8050	12000	11800	12900	12600	3600	2880	7380	4190	904
26	9870	8710	8300	11000	11900	12700	12900	4050	3160	7440	4530	1160
27	10300	8520	8580	10700	11900	12400	12800	4230	3480	7550	4510	746
28	10700	8050	8100	11400	10400	12300	12700	4800	3610	7660	4700	800
29	10900	7590	8040	11800	10700	12100	12800	5540	3750	7790	4850	481
30	10800	7140	8100	11900	---	12000	13200	6390	3870	7880	5010	656
31	11300	---	8130	11500	---	11500	---	6650	---	---	5180	---
MEAN	6970	9780	7830	11200	10900	12100	11800	8170	4940	6190	3940	2510

08123850 COLORADO RIVER ABOVE SILVER, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.0	---	4.0	---	.0	---	21.0	18.0	---	28.0	---	24.0
2	20.0	14.0	---	8.0	---	---	23.0	20.0	24.0	28.0	---	24.0
3	18.0	11.0	5.0	---	---	5.0	22.0	---	25.0	28.0	---	29.0
4	19.0	8.0	5.0	8.0	12.0	12.0	17.0	---	25.0	28.0	---	28.0
5	---	15.0	---	---	8.0	13.0	---	20.0	25.0	---	---	32.0
6	18.0	12.0	7.0	---	10.0	12.0	---	21.0	26.0	---	---	---
7	---	---	7.0	5.0	5.0	16.0	20.0	23.0	---	26.0	---	---
8	20.0	12.0	7.0	5.0	4.0	---	15.0	20.0	---	---	---	---
9	---	13.0	---	7.0	---	---	16.0	17.0	22.0	25.0	---	---
10	15.0	10.0	---	12.0	---	17.0	21.0	---	26.0	25.0	---	22.0
11	17.0	---	6.0	10.0	8.0	12.0	18.0	---	27.0	26.0	---	24.0
12	19.0	8.0	---	---	4.0	12.0	---	20.0	25.0	---	---	24.0
13	17.0	10.0	4.0	---	11.0	12.0	---	22.0	28.0	---	---	---
14	---	---	4.0	9.0	12.0	12.0	13.0	19.0	---	---	---	---
15	19.0	9.0	---	12.0	15.0	---	16.0	18.0	---	25.0	---	26.0
16	19.0	---	---	12.0	---	---	20.0	18.0	26.0	26.0	25.0	26.0
17	20.0	15.0	.0	9.0	---	9.0	20.0	---	27.0	25.0	25.0	24.0
18	20.0	---	7.0	7.0	5.0	11.0	15.0	18.0	31.0	25.0	25.0	25.0
19	20.0	15.0	8.0	---	12.0	11.0	---	19.0	33.0	---	26.0	27.0
20	20.0	17.0	9.0	---	17.0	14.0	---	20.0	25.0	---	27.0	---
21	---	11.0	10.0	6.0	13.0	16.0	20.0	21.0	20.0	27.0	31.0	---
22	19.0	---	12.0	3.0	12.0	---	17.0	23.0	---	26.0	33.0	---
23	13.0	20.0	---	2.0	---	---	---	22.0	25.0	---	---	19.0
24	14.0	10.0	7.0	---	---	17.0	24.0	---	28.0	26.0	---	---
25	13.0	---	---	10.0	10.0	15.0	18.0	---	29.0	25.0	33.0	20.0
26	15.0	8.0	10.0	---	10.0	15.0	14.0	22.0	28.0	---	31.0	20.0
27	12.0	8.0	9.0	---	12.0	15.0	---	24.0	29.0	---	26.0	---
28	---	---	10.0	3.0	15.0	23.0	17.0	21.0	---	26.0	25.0	---
29	18.0	5.0	---	.0	---	---	17.0	25.0	---	---	26.0	16.0
30	17.0	3.0	---	3.0	---	---	20.0	27.0	28.0	26.0	---	17.0
31	12.0	---	12.0	.0	---	13.0	---	---	---	---	---	---
MEAN	17.5	11.0	7.0	6.5	10.0	13.5	18.5	21.0	26.5	26.0	28.0	23.5

08123950 E. V. SPENCE RESERVOIR NEAR ROBERT LEE, TX

LOCATION.--Lat 31°52'46", long 100°31'01", Coke County, Hydrologic Unit 12080008, in outlet works of Robert Lee Dam on the Colorado River, 2.2 mi (3.5 km) west of Robert Lee, and at mile 715 (1,150 km).

DRAINAGE AREA.--15,740 mi² (40,770 km²), approximately, of which 11,600 mi² (30,040 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to June 24, 1969, nonrecording gage at same site and datum.

REMARKS.--The reservoir is formed by a rolled earthfill dam 21,500 ft (6,550 m) long. Closure was made Dec. 30, 1968, and dam was completed in June 1969. The dam is the property of the Colorado River Municipal Water District, which has a permit to divert 50,000 acre-ft (61.6 hm³) annually for municipal, mining, and industrial uses. Inflow to reservoir is partialy regulated by Lake J. B. Thomas, Lake Colorado City, and Champion Creek Reservoir (stations 08118000, 08123000, and 08123600). There are two spillways: the service and emergency spillways. The controlled service spillway is a morning-glory type that is partially controlled by 12 lift gates, 14.48 by 22.0 ft (4.41 by 6.7 m), and discharges through a 28.0-foot-diameter (8.5 m) concrete conduit. The uncontrolled emergency spillway is a 3,200-foot-wide (975 m) cut through natural ground near the right end of dam. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	1,928.0	-
Crest of spillway	1,908.0	653,400
Top of gates	1,900.0	519,300
Top of conservation pool	1,898.0	488,800
Crest of spillway	1,878.0	262,900
Lowest gated outlet (invert)	1,815.85	4,000

COOPERATION.--Capacity table (dated March 1972) was furnished by the Colorado River Municipal Water District. Records of diversions were furnished by the city of San Angelo and the Colorado River Municipal Water District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 202,300 acre-ft (249 hm³) Sept. 30, 1980, elevation, 1,870.72 ft (570.195 m); minimum since first appreciable storage in June 1969 (not from recorder), about 330 acre-ft (0.407 hm³) May 29, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 202,300 acre-ft (249 hm³) Sept. 30 at 2400 hours, elevation, 1,870.72 ft (570.195 m); minimum, 93,560 acre-ft (115 hm³) May 15, elevation, 1,852.48 ft (564.636 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

1,852.0	91,400	1,864.0	154,900
1,856.0	109,900	1,868.0	182,400
1,860.0	130,900	1,871.0	204,400

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	116100	110600	107000	105700	103600	102200	99050	94910	112300	114000	106100	102500
2	115900	110500	106900	105600	103700	102000	99000	94820	112100	113800	105800	102200
3	115600	110300	106800	105500	103600	102000	98910	94730	111900	113600	105500	102200
4	115400	110200	106800	105500	103600	102000	98730	94730	111700	113400	105300	102100
5	115300	110100	106800	105300	103300	101800	98510	94730	111500	113300	105100	102000
6	115100	110000	106600	105300	103100	101800	98550	94500	111300	113000	104800	101700
7	114900	109900	106500	105100	103200	101700	98280	94680	111300	112800	104600	101500
8	114700	109800	106400	105100	103400	101700	98100	94550	111100	112600	104500	101600
9	114200	109700	106300	105000	103200	101600	97920	94410	111100	112500	104300	122200
10	114200	109500	106300	105000	103200	101500	97880	94410	111000	112200	104000	138400
11	114100	109300	106200	104900	103200	101600	97700	94320	111300	111800	103900	145300
12	114000	109200	106500	104800	103100	101500	97610	94140	111400	111400	103900	148500
13	113600	109100	106400	104700	103100	101300	97470	93920	111400	111100	103700	149600
14	113500	109000	106300	104700	103200	101200	97340	93740	111400	110700	103400	150200
15	113500	109100	106200	104600	103200	101100	97250	93960	111400	110500	103400	150200
16	113500	109000	106200	104500	103000	101100	97160	93920	111300	110300	103900	150100
17	113300	108900	105900	104500	102900	100900	96930	98190	111300	110100	104300	149800
18	113200	108800	105900	104400	103100	100800	96930	108100	111100	109700	104300	149700
19	113100	108700	105900	104400	102900	100700	96570	111600	110800	109500	104100	149500
20	112900	108800	105800	104300	102900	100500	96440	112000	110800	109300	104200	149400
21	112800	108600	105800	104200	102700	100400	96260	112200	111800	109000	104300	149100
22	112300	108300	105800	104300	102700	100200	96260	112200	114000	108900	104200	149000
23	112200	108100	105900	104200	102700	100100	96260	112800	114500	108700	104000	151700
24	112000	108000	105700	104100	102600	99990	96130	113100	115000	108500	103900	154800
25	111800	107900	105600	104200	102500	99770	95810	112900	115200	108300	103700	156900
26	111600	107800	105500	104100	102500	99680	95450	112800	115000	108200	103600	161300
27	111600	107700	105500	103900	102500	99810	95310	112800	114900	107900	103500	159300
28	111400	107500	106100	104000	102400	99720	95270	112700	114700	107500	103200	156500
29	111200	107300	106000	103800	102300	99500	95180	112600	114500	107100	103100	179900
30	111100	107100	105900	103900	---	99410	95040	112500	114200	106700	102800	202300
31	110800	---	105800	103700	---	99280	---	112300	---	106300	102700	---
MAX	116100	110600	107000	105700	103700	102200	99050	113100	115200	114000	106100	202300
MIN	110800	107100	105500	103700	102300	99280	95040	93740	110800	106300	102700	101500
(†)	1856.17	1855.44	1855.17	1854.74	1854.43	1853.75	1852.81	1856.47	1856.86	1855.28	1854.50	1870.72
(‡)	-5500	-3700	-1300	-2100	-1400	-3020	-4240	+17260	+1900	-7900	-3600	+99600
(††)	2230	1970	1850	2000	1260	1710	2290	2210	2550	3240	2570	1890

CAL YR 1979 MAX 123000 MIN 104000 ‡ -6600 †† 26050
WTR YR 1980 MAX 202300 MIN 93740 ‡ +86000 †† 25770

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal, industrial, and mining uses.

08123950 E. V. SPENCE RESERVOIR NEAR ROBERT LEE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year. Biochemical analyses: October 1977 to September 1978.

315235100312201 E. V. SPENCE RESERVOIR SITE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
15...	1055	1.0	3630	8.3	10.0	10.0	95
15...	1057	10	3630	8.3	9.5	9.8	92
15...	1059	20	3630	8.2	9.5	9.7	92
15...	1101	30	3630	8.2	9.0	9.6	91
MAY							
01...	1020	1.0	3850	7.7	18.5	8.7	99
01...	1022	10	3850	7.7	18.5	8.6	98
01...	1024	20	3850	7.5	18.0	6.9	78
01...	1026	28	3850	7.4	17.5	6.0	67
AUG							
13...	1040	1.0	3630	8.0	26.0	6.3	82
13...	1042	10	3630	8.0	25.5	6.3	82
13...	1044	20	3630	8.0	25.5	6.1	79
13...	1046	28	3630	7.9	25.5	5.5	71

315335100312401 E. V. SPENCE RESERVOIR SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)
JAN										
15...	1020	1.0	3630	8.3	10.0	1.80	10.2	97	650	540
15...	1022	10	3630	8.3	9.5	--	10.1	95	--	--
15...	1024	20	3630	8.3	9.5	--	10.1	95	--	--
15...	1026	30	3630	8.2	9.0	--	9.6	91	--	--
15...	1028	40	3630	8.1	9.0	--	9.6	91	--	--
15...	1030	50	3630	8.1	9.0	--	9.6	91	690	580
MAY										
01...	0930	1.0	3850	7.7	18.5	.98	8.7	99	750	640
01...	0932	10	3850	7.7	18.5	--	8.7	99	--	--
01...	0934	20	3850	7.7	18.0	--	8.3	93	--	--
01...	0936	30	3850	7.6	17.0	--	7.2	79	--	--
01...	0938	40	3850	7.5	17.0	--	6.3	69	--	--
01...	0940	50	3850	7.3	16.5	--	5.5	59	--	--
01...	0942	62	3830	7.0	16.0	--	2.7	29	750	620
AUG										
13...	1000	1.0	3630	8.0	26.0	1.40	6.3	82	680	570
13...	1002	10	3630	8.0	26.0	--	6.3	82	--	--
13...	1004	20	3630	8.0	26.0	--	6.1	79	--	--
13...	1006	30	3630	8.0	25.5	--	5.8	75	--	--
13...	1008	40	3630	7.9	25.5	--	5.6	72	--	--
13...	1010	50	3790	7.7	20.5	--	.6	7	--	--
13...	1012	60	3810	7.1	20.0	--	.6	7	720	550

E. V. SPENCE RESERVOIR NEAR ROBERT LEE, TX--Continued

315335100312401 E. V. SPENCE RESERVOIR SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
JAN									
15...	130	80	530	9.0	15	140	0	540	820
15...	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--
15...	140	83	520	8.6	15	140	0	530	800
MAY									
01...	160	86	540	8.6	16	140	0	550	930
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	160	86	540	8.6	16	160	0	550	930
AUG									
13...	140	80	510	8.5	16	130	0	510	870
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	150	83	550	8.9	15	200	0	520	920

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JAN									
15...	.5	5.6	2190	.06	.74	.80	.030	40	10
15...	--	--	--	--	--	--	--	--	--
15...	--	--	--	.07	.78	.85	.030	20	10
15...	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--
15...	--	5.8	2160	.09	.85	.94	.030	20	10
MAY									
01...	.5	4.9	2360	.01	.94	.95	.030	30	10
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	.02	1.2	1.2	.060	20	50
01...	--	5.3	2370	.04	1.3	1.3	.070	30	260
AUG									
13...	.3	4.7	2200	.00	.90	.90	.030	40	10
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	1.5	--	.010	20	370
13...	--	--	--	.00	2.4	2.4	.030	70	1500
13...	--	5.9	2340	.00	2.3	2.3	.040	80	1400

E. V. SPENCE RESERVOIR NEAR ROBERT LEE, TX--*Continued*

315413100312501 E. V. SPENCE RESERVOIR SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
15...	1107	1.0	3630	8.3	10.0	10.2	97
15...	1109	10	3630	8.3	10.0	10.2	97
15...	1111	20	3630	8.3	10.0	10.2	97
15...	1113	25	3630	8.3	10.0	10.2	97
MAY							
01...	1035	1.0	3850	7.7	18.5	9.0	102
01...	1037	10	3850	7.7	18.5	9.0	102
01...	1039	20	3850	7.7	18.5	8.8	100
01...	1041	33	3850	7.4	17.5	6.0	67
AUG							
13...	1100	1.0	3630	8.2	26.5	6.7	88
13...	1102	10	3630	8.1	26.5	6.6	87
13...	1104	24	3630	8.1	26.5	6.4	84

315558100342601 E. V. SPENCE RESERVOIR SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
JAN									
15...	1133	1.0	3680	8.3	10.0	.90	9.9	94	720
15...	1135	10	3680	8.3	10.0	--	9.8	93	--
15...	1137	20	3680	8.3	10.0	--	9.5	91	--
15...	1139	30	3680	7.9	9.5	--	6.3	59	790
MAY									
01...	1105	1.0	3890	7.7	20.0	.64	8.4	99	760
01...	1107	10	3890	7.6	19.0	--	7.7	89	--
01...	1109	20	3890	7.4	18.0	--	5.8	65	--
01...	1111	25	3890	7.2	17.5	--	4.4	49	--
01...	1113	33	4790	6.8	18.0	--	1.9	21	930
AUG									
13...	1130	1.0	3650	8.3	27.0	.76	6.8	91	680
13...	1132	10	3650	8.3	27.0	--	6.6	88	--
13...	1134	20	3650	8.3	26.5	--	6.6	87	--
13...	1136	26	3650	8.2	26.5	--	6.3	83	680

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
JAN									
15...	610	150	85	530	8.6	15	140	0	550
15...	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--
15...	680	160	95	590	9.1	15	140	0	610
MAY									
01...	630	160	87	540	8.5	17	150	0	560
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	800	190	110	670	9.6	18	160	0	700
AUG									
13...	570	140	80	510	8.5	17	130	0	500
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	570	140	80	530	8.9	17	136	0	520

E. V. SPENCE RESERVOIR NEAR ROBERT LEE, TX--Continued

315558100342601 E. V. SPENCE RESERVOIR SITE BC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JAN									
15...	830	5.5	2230	.07	.88	.95	.050	20	0
15...	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--
15...	900	5.5	2440	.08	.67	.75	.050	20	50
MAY									
01...	910	5.0	2350	.02	.81	.83	.030	20	10
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	.02	1.1	1.1	.060	20	20
01...	1100	5.2	2870	.01	2.3	2.3	.090	30	300
AUG									
13...	860	3.7	2170	.00	1.1	1.1	.040	30	0
13...	--	--	--	.00	1.1	1.1	.040	20	10
13...	--	--	--	--	--	--	--	--	--
13...	870	3.7	2230	.00	.91	.91	.040	20	10

315619100335601 E. V. SPENCE RESERVOIR SITE BL

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
15...	1250	1.0	3680	8.2	10.5	9.9	96
15...	1252	10	3680	8.2	10.5	9.9	96
15...	1254	21	3680	8.2	10.5	9.9	96
MAY							
01...	1137	1.0	3890	7.7	20.0	8.2	96
01...	1140	8.0	3890	7.6	19.5	7.9	92
AUG							
13...	1120	1.0	3650	8.3	27.0	6.8	91
13...	1122	14	3650	8.3	26.5	8.4	26

315712100352001 E. V. SPENCE RESERVOIR SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
15...	1205	1.0	3850	8.3	10.5	10.1	98
15...	1207	10	3850	8.3	10.0	9.9	94
15...	1209	19	3850	8.1	10.0	7.9	75
MAY							
01...	1202	1.0	4100	8.4	21.0	7.5	89
01...	1204	10	4100	8.2	20.5	6.2	74
01...	1206	14	4100	7.9	20.5	4.2	50
AUG							
13...	1200	1.0	3650	8.4	27.0	7.1	95
13...	1202	10	3650	8.3	27.0	6.6	88
13...	1204	16	3650	8.1	27.0	5.2	69

E. V. SPENCE RESERVOIR NEAR ROBERT LEE, TX--Continued

315810100364901 E. V. SPENCE RESERVOIR SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
JAN									
15...	1225	1.0	4030	8.5	11.0	.40	10.1	99	790
15...	1227	11	4050	8.4	11.0	--	9.8	96	790
MAY									
01...	1220	1.0	4230	7.6	21.5	.30	7.5	90	860
01...	1222	11	4240	7.4	21.0	--	5.6	67	820
AUG									
13...	1215	1.0	3590	8.4	27.0	.24	7.5	100	660
13...	1217	13	3590	8.1	26.5	--	5.4	71	660

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
JAN									
15...	670	160	94	570	8.8	15	140	3	610
15...	670	160	95	580	9.0	15	140	3	620
MAY									
01...	730	180	99	610	9.1	18	150	0	620
01...	700	170	97	600	9.1	17	150	0	630
AUG									
13...	560	140	76	510	8.6	15	120	0	490
13...	560	140	76	510	8.6	16	130	0	500

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JAN									
15...	880	4.9	2410	.02	.92	.94	.060	30	0
15...	900	4.9	2450	.02	.89	.91	.060	20	0
MAY									
01...	1000	4.7	2610	.01	1.0	1.0	.060	20	10
01...	1000	4.6	2590	.01	1.2	1.2	.100	30	80
AUG									
13...	870	3.5	2160	.00	1.4	1.4	.090	40	10
13...	880	3.5	2190	.00	2.3	2.3	.120	40	70

E. V. SPENCE RESERVOIR NEAR ROBERT LEE, TX--Continued

315335100312401 E. V. SPENCE RESERVOIR SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHROMIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)
JAN							
15...	1020	1.0	1	300	1	0	0
15...	1024	20	--	--	--	--	--
15...	1030	50	1	200	1	0	0
MAY							
01...	0930	1.0	1	300	1	0	0
01...	0940	50	--	--	--	--	--
01...	0942	62	1	300	1	0	4
AUG							
13...	1000	1.0	2	200	0	10	0
13...	1008	40	--	--	--	--	--
13...	1010	50	--	--	--	--	--
13...	1012	60	4	200	0	0	0

DATE	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGANESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELENIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN							
15...	40	2	10	.0	0	0	0
15...	20	--	10	--	--	--	--
15...	20	3	10	.2	0	0	10
MAY							
01...	30	1	10	.3	0	0	10
01...	20	--	50	--	--	--	--
01...	30	0	260	.3	0	0	10
AUG							
13...	40	2	10	.1	0	0	10
13...	20	--	370	--	--	--	--
13...	70	--	1500	--	--	--	--
13...	80	3	1400	.4	0	0	10

E. V. SPENCE RESERVOIR NEAR ROBERT LEE, TX--Continued

315335100312401 E. V. SPENCE RESERVOIR SITE AC

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

DATE	JAN 15,80	MAY 1,80	AUG 13,80
TIME	1021	0931	1001
TOTAL CELLS/ML	64000	82000	280000
DIVERSITY: DIVISION	1.3	0.9	0.1
.CLASS	1.3	0.9	0.1
..ORDER	1.4	1.6	0.2
...FAMILY	1.7	1.8	0.4
....GENUS	2.4	2.1	1.4

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...COELASTRACEAE						
....COELASTRUM	--	-	--	-	*	0
...MICRACTINIACEAE						
....GOLENKINIA	*	0	--	-	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	1100	2	*	0	--	-
....CHLORELLA	11000#	17	2600	3	--	-
....KIRCHNERIELLA	560	1	--	-	--	-
....OOCYSTIS	2600	4	4300	5	--	-
....SELENASTRUM	--	-	*	0	*	0
....TETRAEDRON	*	0	--	-	--	-
...SCENEDESMACEAE						
....CRUCIGENIA	750	1	--	-	--	-
....SCENEDESMUS	3700	6	14000#	17	--	-
....TETRASTRUM	750	1	760	1	--	-
..ULOTRICHALES						
...ULOTRICHACEAE						
....GEMINELLA	1500	2	--	-	--	-
..ZYGNEMATALES						
...DESMIDIACEAE						
....COSMARIUM	--	-	--	-	*	0
....STAURASTRUM	*	0	--	-	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	2100	3	*	0	*	0
..PENNALES						
...NAVICULACEAE						
....NAVICULA	*	0	--	-	--	-
...NITZSCHIACEAE						
....NITZSCHIA	--	-	*	0	*	0
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOCHRYSIDACEAE						
....CHROOMONAS	--	-	570	1	--	-
...CRYPTOMONADACEAE						
....CRYPTOMONAS	1500	2	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....AGMENELLUM	3000	5	--	-	2000	1
....ANACYSTIS	35000#	54	19000#	23	2600	1
..HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	--	-	--	-	2300	1
....ANABAENOPSIS	--	-	--	-	6900	2
....APHANIZOMENON	--	-	--	-	1600	1
...OSCILLATORIACEAE						
....LYNGBYA	--	-	--	-	89000#	32
....OSCILLATORIA	--	-	1900	2	170000#	62
....PHORMIDIUM	--	-	39000#	47	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

E. V. SPENCE RESERVOIR NEAR ROBERT LEE, TX--Continued

315810100364901 E. V. SPENCE RESERVOIR SITE DC

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

DATE	JAN 15,80	MAY 1,80	AUG 13,80
TIME	1226	1221	1214
TOTAL CELLS/ML	22000	53000	370000
DIVERSITY: DIVISION	0.9	1.0	0.2
.CLASS	0.9	1.0	0.2
..ORDER	1.1	1.8	0.2
...FAMILY	1.3	2.1	0.8
....GENUS	2.3	2.2	0.9

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...OOCYSTACEAE						
....ANKISTRODESMUS	300	1	510	1	--	-
....CHLORELLA	12000#	54	--	-	--	-
....CHODATELLA	--	-	680	1	--	-
....DICTYOSPHAERIUM	300	1	--	-	*	0
....KIRCHNERIELLA	3200	14	--	-	--	-
....OOCYSTIS	1100	5	4100	8	*	0
....SELENASTRUM	--	-	340	1	--	-
....TETRAEDRON	--	-	*	0	--	-
...SCENEDESMACEAE						
....SCENEDESMUS	610	3	7900	15	*	0
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	300	1	510	1	*	0
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	--	-	*	0	*	0
..PENNALES						
...ACHNANTHACEAE						
....COCCONEIS	--	-	*	0	--	-
...NITZSCHIACEAE						
....NITZSCHIA	--	-	850	2	*	0
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOMONADACEAE						
....CRYPTOMONAS	460	2	--	-	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	2400	11	19000#	36	2000	1
..HORMOGONALES						
...NOSTOCACEAE						
....ANABAENOPSIS	--	-	--	-	45000	12
...OSCILLATORIACEAE						
....LYNGBYA	--	-	--	-	4400	1
....OSCILLATORIA	--	-	--	-	310000#	84
....PHORMIDIUM	--	-	18000#	35	--	-
....SCHIZOTHRIX	1400	6	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	150	1	*	0	*	0
....TRACHELOMONAS	--	-	--	-	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08124000 COLORADO RIVER AT ROBERT LEE, TX

LOCATION.--Lat 31°53'07", long 100°28'49", Coke County, Hydrologic Unit 12080008, on left bank 190 ft (58 m) upstream from bridge on State Highway 208 in Robert Lee, 0.4 mi (0.6 km) upstream from Mountain Creek, 2.7 mi (4.3 km) downstream from Messbox Creek, 3.7 mi (6.0 km) downstream from Robert Lee Dam, and at mile 712 (1,146 km).

DRAINAGE AREA.--15,770 mi^2 (40,840 km^2), of which 11,600 mi^2 (30,040 km^2) probably is noncontributing.

PERIOD OF RECORD.--October 1923 to December 1927, April 1939 to May 1956, October 1968 to current year. Prior to December 1927, published as "near Robert Lee".

REVISED RECORDS.--WSP 1723: 1925(M).

GAGE.--Water-stage recorder. Datum of gage is 1,771.70 ft (540.014 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 31, 1927, nonrecording gage at site 9 mi (14 km) downstream at different datum. Apr. 18 to Sept. 26, 1939, nonrecording gage, and Sept. 27, 1939, to May 9, 1956, water-stage recorder at site 200 ft (61 m) downstream at same datum.

REMARKS.--Records good. Flow affected since April 1949 by Lake Colorado City and since July 1952 by Lake J. B. Thomas. Since December 1968, flow has been regulated by E. V. Spence Reservoir (station 08123950). Many diversions above station for municipal, cooling, mining, agricultural, and industrial uses. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--19 years (water years 1924-27, 1940-55) prior to completion of Robert Lee Dam, 207 ft^3/s (5.862 m^3/s), 150,000 acre-ft/yr (185 hm^3/yr); 12 years (water years 1969-80) regulated, 3.56 ft^3/s (0.101 m^3/s), 2,580 acre-ft/yr (3.18 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,500 ft^3/s (920 m^3/s) Sept. 6, 1926, gage height, 20.20 ft (6.157 m), site and datum then in use, from rating curve extended above 15,000 ft^3/s (425 m^3/s); maximum gage height, 20.63 ft (6.288 m) Sept. 9, 1980; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1907, 26.7 ft (8.14 m) Oct. 13, 1957, from floodmarks. Flood in April 1922 reached a stage of 25.5 ft (7.77 m), present datum, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 24,500 ft^3/s (694 m^3/s) Sept. 9 at 1100 hours, gage height, 20.63 ft (6.288 m); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.37	.19	.26	.09	.03	.09	.00	.39	.00	.00	4.1	.00
2	.37	.22	.28	.11	.03	.07	.00	.00	.00	.00	.63	.00
3	.47	.18	.25	.14	.05	.07	.00	.01	.00	.00	.10	.00
4	.35	.19	.27	.09	.08	.05	.00	.07	.00	.00	.04	.00
5	.30	.17	.28	.01	13	.04	.00	.16	.00	.00	.00	.00
6	.27	.14	.31	.01	12	.06	.00	.16	.00	.00	.00	.00
7	.18	.13	.39	.02	1.1	.06	.00	.64	.00	.00	.00	.00
8	.15	.15	.31	.02	.48	.01	.00	1.6	.00	.00	.00	.00
9	.04	.11	.25	.01	.16	.00	.00	1.5	.00	.00	.00	5600
10	.00	.11	.26	.00	.08	.00	.00	1.3	.00	.00	.00	24
11	.00	.11	.28	.00	.07	.00	.00	1.2	.00	10	.00	4.6
12	.00	.10	.92	.00	.05	.00	.00	1.2	.00	117	.00	2.4
13	.00	.10	.63	.04	.08	.00	.00	1.2	.00	58	.00	1.5
14	.00	.10	.86	.07	.11	.00	.00	1.3	.00	2.4	.00	.78
15	.06	.08	.44	.04	.13	.00	.00	1.7	.00	1.6	5.0	.46
16	.08	.08	.27	.05	.11	.00	.00	1.8	.00	1.2	.63	.29
17	.07	.08	.30	.04	.09	.00	.00	1.6	.00	.87	.25	.20
18	.11	.09	.29	.03	.09	.00	.08	1.4	.00	8.3	.20	.16
19	.16	.09	.38	.02	.06	.00	.02	1.5	.00	16	.15	.14
20	.12	.11	.46	.02	.10	.00	.03	1.4	.00	2.1	.15	.09
21	.09	.20	.58	.03	.27	.00	.02	1.3	.00	1.0	.13	.05
22	.08	.16	.61	.24	.29	.00	.01	1.2	.00	.56	.10	.04
23	.09	.26	1.1	.11	.23	.00	1.2	1.1	.00	.30	.05	47
24	.07	.32	.79	.07	.19	.00	10	1.1	.00	.13	.03	20
25	.08	.29	.58	.05	.18	.00	1.7	.93	.00	.03	.03	19
26	.07	.28	.05	.03	.17	.00	.36	.56	.00	.00	.02	13
27	.09	.21	.02	.02	.18	.00	.43	.25	.00	.00	.00	30
28	.09	.23	.65	.03	.14	.00	.26	.88	.00	26	.00	147
29	.11	.25	.18	.04	.10	.00	.46	.16	.00	104	.00	8.4
30	.15	.28	.11	.04	---	.00	.43	.07	.00	105	.00	4.1
31	.19	---	.08	.04	---	.00	---	.00	---	81	.00	---
TOTAL	4.21	5.01	12.44	1.51	29.65	.45	15.00	27.68	.00	535.49	11.61	5923.21
MEAN	.14	.17	.40	.049	1.02	.015	.50	.89	.000	17.3	.37	197
MAX	.47	.32	1.1	.24	13	.09	10	1.8	.00	117	5.0	5600
MIN	.00	.08	.02	.00	.03	.00	.00	.00	.00	.00	.00	.00
AC-FT	8.4	9.9	25	3.0	59	.9	30	55	.00	1060	23	11750

CAL YR 1979 TOTAL 711.68 MEAN 1.95 MAX 121 MIN .00 AC-FT 1410
WTR YR 1980 TOTAL 6566.26 MEAN 17.9 MAX 5600 MIN .00 AC-FT 13020

08125500 OAK CREEK RESERVOIR NEAR BLACKWELL, TX

LOCATION.--Lat 32°03'25", long 100°17'37", Coke County, Hydrologic Unit 12080008, on left bank at municipal pump station, 1.9 mi (3.1 km) upstream from dam on Oak Creek, 2.5 mi (4.0 km) southeast of Blackwell, 14 mi (23 km) north of Bronte, and 20 mi (32 km) upstream from mouth.

DRAINAGE AREA.--244 mi² (632 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1953 to current year.

GAGE.--Nonrecording gage. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The reservoir is formed by a rolled earthfill dam 3,800 ft (1,160 m) long. The dam was completed in May 1952, and deliberate impoundment began May 12, 1953. The uncontrolled emergency spillway is an 800-foot-wide (240 m) cut through natural ground, located 1,200 ft (366 m) from right end of dam. The service spillway is an uncontrolled cut channel through natural ground 300 ft (91 m) wide, located 2,000 ft (610 m) from right end of dam. The reservoir and dam are the property of the city of Sweetwater. The dam was built to impound water for municipal and industrial uses by the cities of Sweetwater, Blackwell, and Bronte. Since April 1962, West Texas Utilities Co. has operated a steam generating powerplant located on the reservoir. There is a gated outlet at the service spillway that can release water downstream to Oak Creek through a 24-inch (610 mm) concrete pipe. The capacity curve is based on a 1950 survey. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam..	2,014.0	-
Crest of spillway..	2,005.0	52,490
Crest of spillway (top of conservation pool)........................	2,000.0	39,360
Lowest gated outlet (invert)..	1,951.0	100

COOPERATION.--Capacity curve, record of lake elevation, and diversions were furnished by the city of Sweetwater.

EXTREMES (at 0800) FOR PERIOD OF RECORD.--Maximum contents observed, 49,100 acre-ft (60.5 hm³) Oct. 13, 1957, elevation, 2,003.80 ft (610.758 m); minimum observed, 6,050 acre-ft (7.46 hm³) Sept. 6-8, 1980, elevation, 1,974.5 ft (601.83 m).

EXTREMES (at 0800) FOR CURRENT YEAR.--Maximum contents observed, 19,550 acre-ft (24.1 hm³) Sept. 30, elevation, 1,989.3 ft (606.34 m); minimum, 6,050 acre-ft (7.46 hm³) Sept. 6-8, elevation, 1,974.5 ft (601.83 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

1,974.0	5,770
1,982.0	11;520
1,990.0	20,530

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11880	11080	10400	10150	9820	9180	8580	7650	7060	7720	6640	6220
2	11880	10990	10400	10150	9820	9100	8580	7590	7060	7650	6640	6170
3	11880	10990	10400	10150	9740	9100	8510	7590	7000	7650	6570	6170
4	11880	10990	10310	10150	9740	9030	8510	7590	7000	7590	6570	6110
5	11790	10990	10310	10150	9660	9030	8430	7520	6940	7590	6570	6110
6	11790	10910	10310	10150	9660	9030	8430	7520	6940	7520	6510	6050
7	11700	10910	10310	10150	9580	9030	8360	7520	6870	7520	6510	6050
8	11700	10910	10310	10060	9580	8950	8290	7520	6870	7520	6450	6050
9	11610	10820	10310	10060	9580	8950	8210	7520	6870	7450	6450	10910
10	11520	10820	10230	10060	9580	8950	8210	7520	6810	7390	6390	14590
11	11520	10820	10230	10060	9580	8950	8140	7520	6870	7390	6390	14590
12	11520	10820	10230	10060	9500	8950	8070	7450	6810	7320	6340	14590
13	11430	10820	10230	10060	9500	8950	8000	7450	6810	7320	6340	14590
14	11430	10820	10230	9980	9500	8880	8000	7450	6750	7260	6340	14590
15	11340	10730	10230	9980	9420	8880	7940	7450	6690	7260	6280	14590
16	11340	10730	10230	9980	9420	8800	7860	7520	6690	7190	6220	14590
17	11340	10730	10230	9980	9420	8800	7860	7520	6690	7190	6570	14480
18	11250	10650	10230	9980	9420	8800	7860	7450	6640	7130	6570	14380
19	11170	10650	10230	9900	9340	8730	7860	7450	6570	7130	6510	14380
20	11170	10650	10230	9900	9340	8730	7860	7450	6570	7060	6510	14380
21	11250	10650	10150	9900	9340	8730	7790	7450	6510	7060	6510	14380
22	11250	10650	10150	9900	9340	8660	7790	7390	7860	7000	6450	14280
23	11170	10560	10150	9900	9260	8660	7790	7390	7940	7000	6450	14380
24	11170	10560	10150	9900	9260	8580	7790	7320	7940	6940	6390	14910
25	11170	10560	10150	9900	9260	8580	7720	7320	7940	6940	6390	14910
26	11170	10480	10150	9900	9180	8580	7720	7260	7940	6870	6340	15010
27	11170	10480	10150	9820	9180	8580	7720	7260	7860	6810	6340	15320
28	11080	10480	10150	9820	9180	8660	7720	7190	7860	6810	6280	17810
29	11080	10480	10150	9820	9180	8660	7650	7190	7790	6750	6280	18870
30	11080	10480	10230	9820	---	8660	7650	7130	7720	6750	6280	19550
31	11080	---	10230	9820	---	8580	---	7130	---	6690	6220	---
MAX	11880	11080	10400	10150	9820	9180	8580	7650	7940	7720	6640	19550
MIN	11080	10480	10150	9820	9180	8580	7650	7130	6510	6690	6220	6050
(†)	1981.5	1980.8	1980.5	1980.0	1979.2	1978.4	1977.1	1976.3	1977.2	1975.6	1974.8	1989.3
(‡)	-890	-600	-250	-410	-640	-600	-930	-520	+590	-1030	-470	+13330
(††)	479	376	364	357	336	357	397	365	312	308	290	264

CAL YR 1979 MAX 13680 MIN 10150 ‡ -1380 †† 5110
WTR YR 1980 MAX 19550 MIN 6050 ‡ +7580 †† 4200

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet for municipal and industrial uses.

08125500 OAK CREEK RESERVOIR NEAR BLACKWELL, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
NOV									
02...	1135	1320	25.0	510	380	110	57	87	1.7

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
NOV								
02...	9.8	160	0	340	150	.4	8.0	841

08126380 COLORADO RIVER NEAR BALLINGER, TX
(Formerly published as 08126500 Colorado River at Ballinger)

LOCATION.--Lat 31°42'55", long 100°01'34", Runnels County, Hydrologic Unit 12090101, at left downstream end of bridge on Farm Road 2111, 0.4 mi (0.6 km) upstream from Rocky Creek, 5.0 mi (8.0 km) northwest of Ballinger, and at mile 665.6 (1,071.0 km).

DRAINAGE AREA.--16,358 mi^2 (42,367 km^2), approximately, of which 10,260 mi^2 (26,573 km^2) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1907 to September 1979 (published as "at Ballinger", station 08126500), October 1979 to September 1980. Monthly discharge only for some periods published in WSP 1312. Gage-height records collected in this vicinity from 1903-29 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1118: Drainage area. WSP 1512: 1916-17, 1919-20, 1921(M), 1922-25, 1928(M), 1930(M). WSP 1712: 1935, 1954-55(M). WDR TX-78-3: 1975-77.

GAGE.--Water-stage recorder. Datum of gage is 1,606.51 ft (489.664 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 29, 1930, nonrecording gages at several sites and at various datums near site 5.4 mi (8.7 km) downstream. Nov. 29, 1930, to May 1, 1975, water-stage recorder at site 6.2 mi (10.0 km) downstream and May 1, 1975, to Sept. 30, 1979, water-stage recorder at site 5.4 mi (8.7 km) downstream, both at datum 12.77 ft (3.892 m) lower.

REMARKS.--Water-discharge records good. Diversions above station for irrigation, municipal supplies, and oilfield operation. Flow is affected by E. V. Spence and Oak Creek Reservoirs (see stations 08123950 and 08125500) and at times by discharge from the flood-detention pools of 25 floodwater-retarding structures with a combined detention capacity of 26,640 acre-ft (32.8 hm^3). These structures control runoff from 133 mi^2 (344 km^2) in the Kickapoo and Valley Creeks drainage basins.

AVERAGE DISCHARGE.--61 years (water years 1908-68) prior to completion of Robert Lee Dam, 336 ft^3/s (9.516 m^3/s), 243,400 acre-ft/yr (300 hm^3/yr); 12 years (water years 1969-80) partially regulated, 44.7 ft^3/s (1.266 m^3/s), 32,390 acre-ft/yr (39.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 75,400 ft^3/s (2,140 m^3/s) Sept. 18, 1936, gage height, 28.6 ft (8.72 m), at former site and datum; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1882, about 36 ft (11.0 m) sometime in 1884, at former site and datum, from information by local residents. Flood of Aug. 6, 1906, reached a stage of about 32.0 ft (9.75 m), at former site and datum, from floodmarks (backwater from Elm Creek).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,840 ft^3/s (279 m^3/s) Sept. 9 at 1600 hours, gage height, 24.72 ft (7.535 m); minimum daily, 0.02 ft^3/s (0.001 m^3/s) Apr. 22-24, May 1, 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.65	.78	1.0	7.1	5.5	1.9	.07	.02	3.0	1.9	.30	.37
2	.59	.41	1.1	5.7	5.8	1.2	.73	.02	2.2	.96	15	.35
3	1.2	.08	1.2	4.5	5.8	1.2	.65	.03	1.5	.72	22	.42
4	1.3	.54	1.1	4.5	5.5	1.3	.66	.03	1.2	.88	6.0	.42
5	1.5	.88	.90	4.5	5.7	.85	.78	.03	.74	.96	.89	.20
6	.75	.80	.95	4.0	5.0	.96	.80	.03	.25	.88	.14	.20
7	.79	.80	1.0	3.4	5.8	1.4	.69	.04	.29	.58	.13	.47
8	.86	.64	1.2	3.2	24	1.2	.67	.04	.38	.27	.12	2.9
9	.82	.08	1.2	3.4	12	.83	.49	.03	1.2	.17	.10	6150
10	.63	.38	1.2	3.4	6.9	.75	.68	.04	2.4	.16	.10	5730
11	.11	.80	1.3	3.2	5.6	.49	.70	.03	4.7	.16	.10	510
12	.11	.88	1.5	3.0	4.1	.59	.73	.03	2.1	.16	.10	188
13	.48	.49	1.6	3.0	5.6	.22	1.3	.04	.37	.16	.10	113
14	.61	.72	1.9	3.0	6.4	.04	.95	.04	.35	.16	.11	67
15	1.3	.58	1.7	3.2	5.7	.03	.81	710	.43	.17	.14	41
16	1.0	.80	1.4	3.4	4.9	.48	.60	554	.42	.22	.15	28
17	.84	1.2	1.4	3.2	4.0	.76	.44	78	.46	.26	102	20
18	.90	1.2	1.3	3.4	4.2	.45	.39	22	.48	.28	302	13
19	1.1	1.2	1.2	3.4	4.2	.64	.45	13	.52	.30	46	11
20	.97	1.3	.27	3.8	3.4	.83	.28	21	.55	.31	16	8.4
21	.94	1.2	.16	4.2	3.2	.50	.03	401	.65	.26	5.4	6.6
22	.73	1.2	.96	9.5	2.7	.49	.02	75	1820	.16	4.1	6.6
23	.71	1.2	3.5	11	2.3	.65	.02	20	430	.16	3.4	7.5
24	.80	1.2	.88	10	2.3	.21	.02	10	78	.20	3.0	58
25	.16	.96	.65	8.7	2.0	.03	.09	5.8	28	.35	2.7	165
26	.49	.83	.65	6.7	2.0	.07	.34	3.8	15	.42	2.1	88
27	.91	.82	.72	5.3	2.3	.67	.44	2.6	13	.46	1.9	411
28	.68	.80	8.5	5.3	1.8	1.1	.24	50	7.5	.43	.71	1410
29	.80	.91	18	5.5	1.7	.85	.04	21	5.7	.49	.36	926
30	.98	.85	9.2	5.6	---	.04	.03	8.3	4.0	.44	.39	512
31	.55	---	8.7	5.7	---	.03	---	3.6	---	.36	.50	---
TOTAL	24.26	24.53	76.34	153.8	150.4	20.76	14.14	1999.55	2425.39	13.39	536.04	16475.43
MEAN	.78	.82	2.46	4.96	5.19	.67	.47	64.5	80.8	.43	17.3	549
MAX	1.5	1.3	18	11	24	1.9	1.3	710	1820	1.9	302	6150
MIN	.11	.08	.16	3.0	1.7	.03	.02	.02	.25	.16	.10	.20
AC-FT	48	49	151	305	298	41	28	3970	4810	27	1060	32680

CAL YR 1979 TOTAL 6807.43 MEAN 18.7 MAX .030 MIN .08 AC-FT 13500
WTR YR 1980 TOTAL 21914.03 MEAN 59.9 MAX 6150 MIN .02 AC-FT 43470

08126380 COLORADO RIVER NEAR BALLINGER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1961 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1961 to current year.
WATER TEMPERATURES: October 1961 to current year.
SUSPENDED SEDIMENT DISCHARGE: January 1978 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 13,500 micromhos May 3, 1963; minimum daily, 244 micromhos Sept. 9, 1980.
WATER TEMPERATURES: Maximum daily, 39.0°C July 3, 1977; minimum daily, 0.0°C Jan. 9-11, 1973.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 3,740 mg/L Sept. 9 1980; minimum daily mean, 4 mg/L Feb. 2, 1980.
SEDIMENT LOADS: Maximum daily, 94,100 tons Aug. 3, 1978; minimum daily, 0 tons on many days during 1978 and 1980.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 5,080 micromhos Sept. 6; minimum daily, 244 micromhos Sept. 9.
WATER TEMPERATURES: Maximum daily, 34.0°C July 26; minimum daily, 3.5°C Jan. 29.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 3,740 mg/L Sept. 9; minimum daily mean, 4 mg/L Feb. 2.
SEDIMENT LOADS: Maximum daily, 73,800 tons Sept. 9; minimum daily, 0.0 tons on many days during year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
OCT 15...	1145	.75	4690	--	22.0	2200	2000	510	230	370	3.4
DEC 01...	1155	1.0	4750	--	9.0	2200	2000	550	190	350	3.3
JAN 01...	1045	7.1	2860	--	8.0	1000	890	240	100	270	3.7
FEB 01...	1005	5.5	3810	--	4.0	1400	1200	340	130	340	4.0
MAR 01...	1650	1.4	3450	--	9.5	1500	1400	390	130	250	2.8
MAY 15...	1530	848	--	--	16.5	--	--	--	--	--	--
21...	1320	489	--	--	20.5	--	--	--	--	--	--
21...	1325	539	363	7.7	21.0	140	44	43	8.6	17	.6
JUN 22...	1208	3260	510	--	23.5	200	86	59	13	19	.6
22...	1710	2670	--	--	27.0	--	--	--	--	--	--
JUL 01...	2000	.33	1560	--	31.5	590	480	160	47	110	2.0
AUG 18...	0925	283	--	--	25.5	--	--	--	--	--	--
19...	1345	40	588	--	28.0	150	67	40	11	56	2.0
SEP 09...	1558	9780	214	--	22.0	81	13	25	4.4	8.5	.4
28...	1100	1870	--	--	18.0	--	--	--	--	--	--

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 15...	6.8	220	0	1900	620	.5	10	3760	--	--	--
DEC 01...	8.8	140	0	1900	630	.4	8.4	3710	--	--	--
JAN 01...	9.0	150	0	830	450	.3	.3	1970	--	--	--
FEB 01...	9.5	180	0	1100	610	.4	3.2	2620	--	--	--
MAR 01...	8.5	170	0	1300	450	.6	2.5	2620	--	--	--
MAY 15...	--	--	--	--	--	--	--	--	3240	7420	91
21...	--	--	--	--	--	--	--	--	2140	2830	98
21...	4.6	120	0	52	25	.3	8.8	218	--	--	--
JUN 22...	5.6	140	0	63	48	.2	9.1	286	--	--	--
22...	--	--	--	--	--	--	--	--	4930	35500	97
JUL 01...	6.4	140	0	410	200	.3	8.5	1010	--	--	--
AUG 18...	--	--	--	--	--	--	--	--	951	727	99
19...	5.6	95	0	68	97	.2	4.9	330	--	--	--
SEP 09...	4.9	82	0	18	12	.2	5.7	119	--	--	--
28...	--	--	--	--	--	--	--	--	1720	8680	79

08126380 COLORADO RIVER NEAR BALLINGER, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, WATER (DEG C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM
MAY							
15...	1530	848	16.5	3240	7420	43	50
21...	1320	489	20.5	2140	2830	71	81
JUN							
22...	1710	2670	27.0	4930	35500	48	68
AUG							
18...	0925	283	25.5	951	727	85	85
SEP							
28...	1100	1870	18.0	1720	8680	52	53

DATE	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM
MAY							
15...	64	76	82	91	96	99	100
21...	87	93	97	98	98	99	100
JUN							
22...	81	89	95	97	99	99	100
AUG							
18...	92	93	96	99	99	--	100
SEP							
28...	63	65	75	79	88	98	100

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	24.26	4140	3110	204	660	43	1400	94	1800
NOV.	1979	24.53	4820	3770	250	780	52	1800	120	2200
DEC.	1979	76.34	3480	2490	514	550	113	1100	222	1400
JAN.	1980	153.8	3480	2450	1020	540	226	1000	432	1400
FEB.	1980	150.4	3300	2300	933	510	208	960	389	1300
MAR.	1980	20.76	3910	2850	160	620	35	1300	71	1600
APR.	1980	14.14	4510	3440	131	730	28	1600	61	2000
MAY	1980	1999.55	726	404	2180	100	562	110	592	200
JUNE	1980	2425.39	374	199	1310	53	346	48	316	94
JULY	1980	13.39	3380	2420	88	530	19	1000	38	1400
AUG.	1980	536.04	1540	1000	1450	230	337	370	543	540
SEPT	1980	16475.43	404	220	9780	58	2560	54	2490	100
TOTAL		21914.03	**	**	18000	**	4530	**	5370	**
WTD. AVG.		60	527	304	**	77	**	91	**	150

08126380 COLORADO RIVER NEAR BALLINGER, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2960	4920	4820	2860	3790	3490	4760	4800	1070	1560	4360	3630
2	3030	4890	4790	2930	3830	3600	4260	4820	1310	2180	4150	3550
3	2870	4610	4800	2960	3820	3720	4360	4760	1780	2840	3950	3500
4	2840	4830	4760	2980	3840	3740	4310	4770	1970	2530	4620	3800
5	2800	4870	4790	3050	3860	3840	4360	4780	3170	2780	4760	4740
6	3040	4880	4780	3070	3910	3820	4450	4790	4310	3020	4770	5080
7	3020	4890	4760	3220	3930	3830	4480	4740	4440	4310	4780	3820
8	2970	4900	4770	3370	3760	3840	4510	4700	3780	4340	4830	1890
9	3540	4970	4770	3260	2900	3910	4540	4790	3090	4570	4820	244
10	4190	4670	4760	3370	3060	3890	4560	4820	2940	4600	4790	314
11	4450	4920	4740	3400	3100	3910	4590	4840	2220	4570	4780	454
12	4480	4900	4700	3430	2850	4030	4610	4850	3300	4640	4860	546
13	4640	4870	4630	3500	2670	4050	4550	4810	4250	4600	4880	604
14	4670	4900	4540	3510	2490	4070	4530	4820	4370	4550	4960	748
15	4720	4910	4430	3570	2710	4110	4540	1250	4330	4510	4940	756
16	4690	4940	4360	3630	2800	4060	4550	381	4430	4360	4980	882
17	4710	4920	4300	3650	2840	3970	4580	653	4420	4270	3250	928
18	4740	4770	4320	3680	2830	4100	4570	664	4400	4210	795	1070
19	4760	4850	4330	3700	2900	4070	4560	714	4360	4170	596	1140
20	4780	4730	4480	3750	2940	4090	4580	852	4410	4120	628	1260
21	4800	4750	4600	3790	3040	4150	4650	350	4460	4610	746	1320
22	4810	4730	4400	3720	3060	4140	4720	640	296	4460	849	1390
23	4820	4740	3950	3620	3130	4120	4780	474	472	4650	954	1520
24	4860	4750	4000	3670	3200	4330	4840	578	566	4520	1030	1330
25	4660	4780	4020	3640	3220	4500	4720	886	646	4110	1080	2650
26	4840	4760	4050	3650	3290	4680	4610	1080	724	4120	1320	3510
27	4870	4770	4000	3690	3300	4280	4600	1890	733	4120	1340	1110
28	4880	4780	3090	3680	3340	4190	4640	417	871	4240	2120	534
29	4910	4830	2600	3650	3390	4170	4770	512	1070	4200	2780	491
30	4880	4810	2710	3640	---	4470	4790	745	1270	4210	3040	517
31	4860	---	2830	3760	---	4620	---	852	---	4280	2980	---
MEAN	4230	4830	4290	3460	3230	4060	4580	2580	2650	4010	3190	1780

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	19.0	9.0	8.0	4.0	9.5	19.0	---	27.5	31.5	31.0	30.5
2	---	15.0	13.0	10.0	6.5	12.5	24.0	---	29.0	31.5	32.0	30.5
3	---	14.5	13.5	11.0	11.0	8.5	22.0	---	27.0	32.0	31.5	31.0
4	---	20.0	15.0	9.5	11.0	10.5	13.5	---	26.0	33.0	29.0	29.0
5	---	16.5	13.0	9.0	12.5	15.0	14.0	23.0	29.0	29.0	32.0	29.0
6	---	14.5	13.0	10.5	12.0	11.5	23.5	---	29.0	31.5	30.0	28.0
7	---	13.5	7.0	10.5	10.5	18.5	19.5	---	32.5	25.5	29.0	26.0
8	---	16.0	14.0	10.0	8.5	13.0	15.5	23.0	22.5	31.0	28.0	26.0
9	---	15.5	14.0	11.0	4.5	17.5	17.0	22.0	24.5	33.0	32.0	21.0
10	---	14.5	18.0	10.5	6.0	16.5	17.5	25.0	27.0	33.0	28.0	25.0
11	19.5	16.0	14.0	11.0	8.5	13.5	24.0	---	27.0	33.0	28.0	26.0
12	19.0	13.0	9.5	8.5	6.5	9.0	11.0	---	29.0	30.0	28.0	27.0
13	19.0	13.0	8.5	10.5	9.5	14.0	15.0	---	27.5	---	30.0	27.0
14	19.0	14.5	8.5	10.5	13.5	---	14.5	---	29.0	30.0	28.5	27.5
15	20.5	13.5	8.0	13.5	13.5	---	16.5	16.5	29.0	33.0	30.0	32.0
16	20.0	14.0	8.0	15.0	8.0	18.0	26.5	21.5	29.0	---	30.0	28.5
17	21.5	13.5	7.5	15.5	5.5	17.5	18.0	25.0	27.0	29.5	28.0	26.5
18	21.5	20.5	10.0	12.5	11.0	16.0	23.5	24.0	25.5	30.0	25.5	29.0
19	20.5	15.5	8.5	16.0	11.0	15.0	21.0	25.0	33.0	32.0	28.0	28.5
20	21.0	20.0	10.0	11.0	12.5	19.5	16.5	25.0	29.5	31.5	30.0	28.0
21	21.5	13.5	11.5	9.5	14.0	17.0	---	20.5	30.0	32.5	31.0	28.0
22	16.0	9.5	12.5	8.5	13.5	13.5	---	25.0	27.0	28.0	30.0	30.0
23	14.5	13.5	12.5	7.0	14.0	16.0	---	26.5	29.0	29.5	31.0	24.5
24	18.5	18.0	14.0	10.5	16.0	18.5	23.5	29.0	31.5	32.0	31.0	27.5
25	14.0	14.5	12.5	9.0	17.0	---	21.0	26.5	32.5	31.0	32.0	25.0
26	25.0	18.0	14.5	10.5	15.0	19.0	21.5	27.0	32.0	34.0	29.0	22.5
27	24.0	16.5	12.5	8.0	18.5	17.0	24.5	28.0	32.0	25.0	30.5	20.0
28	19.0	14.0	11.0	6.5	15.5	22.0	25.5	27.0	32.5	33.5	30.0	18.0
29	25.0	11.5	10.5	3.5	19.5	18.0	23.0	27.0	31.0	25.0	30.0	19.5
30	13.5	6.0	9.0	6.0	---	16.0	---	27.5	31.0	26.0	29.0	23.5
31	13.5	---	8.0	4.0	---	---	---	26.5	---	26.0	32.0	---
MEAN	19.5	15.0	11.5	10.0	11.5	15.5	19.5	25.0	29.0	30.5	30.0	26.5

08126380 COLORADO RIVER NEAR BALLINGER, TX--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	.65	52	.09	.78	34	.07	1.0	16	.04
2	.59	47	.07	.41	19	.02	1.1	12	.04
3	1.2	55	.18	.08	41	.00	1.2	13	.04
4	1.3	58	.20	.54	38	.06	1.1	20	.06
5	1.5	50	.20	.88	32	.08	.90	17	.04
6	.75	55	.11	.80	22	.05	.95	17	.04
7	.79	60	.13	.80	20	.04	1.0	23	.06
8	.86	40	.09	.64	40	.07	1.2	35	.11
9	.82	55	.12	.08	41	.00	1.2	27	.09
10	.63	65	.11	.38	26	.03	1.2	28	.09
11	.11	75	.02	.80	18	.04	1.3	20	.07
12	.11	46	.01	.88	42	.10	1.5	22	.09
13	.48	43	.06	.49	14	.02	1.6	19	.08
14	.61	38	.06	.72	24	.05	1.9	10	.05
15	1.3	43	.15	.58	18	.03	1.7	10	.05
16	1.0	28	.08	.80	16	.03	1.4	9	.03
17	.84	39	.09	1.2	18	.06	1.4	14	.05
18	.90	25	.06	1.2	26	.08	1.3	8	.03
19	1.1	42	.12	1.2	14	.05	1.2	7	.02
20	.97	28	.07	1.3	32	.11	.27	40	.03
21	.94	21	.05	1.2	20	.06	.16	24	.01
22	.73	14	.03	1.2	10	.03	.96	22	.06
23	.71	14	.03	1.2	10	.03	3.5	36	.34
24	.80	16	.03	1.2	11	.04	.88	24	.06
25	.16	7	.00	.96	20	.05	.65	13	.02
26	.49	13	.02	.83	10	.02	.65	10	.02
27	.91	18	.04	.82	12	.03	.72	19	.04
28	.68	17	.03	.80	12	.03	8.5	45	1.0
29	.80	14	.03	.91	12	.03	18	45	2.2
30	.98	19	.05	.85	22	.05	9.2	26	.65
31	.55	28	.04	---	---	---	8.7	16	.38
TOTAL	24.26	---	2.37	24.53	---	1.36	76.34	---	5.89

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	7.1	12	.23	5.5	11	.16	1.9	34	.17
2	5.7	15	.23	5.8	4	.06	1.2	30	.10
3	4.5	19	.23	5.8	12	.19	1.2	17	.06
4	4.5	14	.17	5.5	15	.22	1.3	17	.06
5	4.5	14	.17	5.7	24	.37	.85	41	.09
6	4.0	13	.14	5.0	20	.27	.96	32	.08
7	3.4	14	.13	5.8	30	.47	1.4	41	.15
8	3.2	18	.16	24	45	3.4	1.2	42	.14
9	3.4	14	.13	12	16	.52	.83	22	.05
10	3.4	17	.16	6.9	15	.28	.75	34	.07
11	3.2	24	.21	5.6	13	.20	.49	26	.03
12	3.0	16	.13	4.1	8	.09	.59	36	.06
13	3.0	14	.11	5.6	8	.12	.22	22	.01
14	3.0	16	.13	6.4	20	.35	.04	27	.00
15	3.2	19	.16	5.7	26	.40	.03	48	.00
16	3.4	19	.17	4.9	18	.24	.48	58	.08
17	3.2	21	.18	4.0	10	.11	.76	25	.05
18	3.4	22	.20	4.2	14	.16	.45	16	.02
19	3.4	40	.37	4.2	21	.24	.64	20	.03
20	3.8	34	.35	3.4	25	.23	.83	66	.15
21	4.2	22	.25	3.2	55	.48	.50	67	.09
22	9.5	25	.64	2.7	36	.26	.49	70	.09
23	11	8	.24	2.3	24	.15	.65	84	.15
24	10	12	.32	2.3	28	.17	.21	72	.04
25	8.7	16	.38	2.0	20	.11	.03	60	.00
26	6.7	18	.33	2.0	34	.18	.07	54	.01
27	5.3	16	.23	2.3	26	.16	.67	64	.12
28	5.3	32	.46	1.8	26	.13	1.1	50	.15
29	5.5	14	.21	1.7	18	.08	.85	64	.15
30	5.6	14	.21	---	---	---	.04	46	.00
31	5.7	13	.20	---	---	---	.03	60	.00
TOTAL	153.8	---	7.23	150.4	---	9.80	20.76	---	2.20

08126380 COLORADO RIVER NEAR BALLINGER, TX--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	.07	90	.02	.02	72	.00	3.0	34	.28
2	.73	42	.08	.02	62	.00	2.2	26	.15
3	.65	62	.11	.03	57	.00	1.5	31	.13
4	.66	64	.11	.03	52	.00	1.2	39	.13
5	.78	56	.12	.03	52	.00	.74	58	.12
6	.80	33	.07	.03	45	.00	.25	64	.04
7	.69	26	.05	.04	42	.00	.29	64	.05
8	.67	29	.05	.04	44	.00	.38	70	.07
9	.49	40	.05	.03	62	.00	1.2	57	.18
10	.68	40	.07	.04	92	.00	2.4	68	.44
11	.70	38	.07	.03	75	.00	4.7	40	.51
12	.73	20	.04	.03	37	.00	2.1	48	.27
13	1.3	20	.07	.04	17	.00	.37	70	.07
14	.95	38	.10	.04	20	.00	.35	54	.05
15	.81	52	.11	710	1780	9050	.43	36	.04
16	.60	32	.05	554	1470	3410	.42	55	.06
17	.44	34	.04	78	150	32	.46	55	.07
18	.39	31	.03	22	68	4.0	.48	59	.08
19	.45	40	.05	13	54	1.9	.52	42	.06
20	.28	30	.02	21	67	14	.55	32	.05
21	.03	50	.00	401	1560	1950	.65	67	.12
22	.02	75	.00	75	300	61	1820	2990	19600
23	.02	100	.00	20	202	11	430	1150	1640
24	.02	130	.00	10	98	2.6	78	400	84
25	.09	110	.03	5.8	116	1.8	28	58	4.4
26	.34	86	.08	3.8	54	.55	15	52	2.1
27	.44	49	.06	2.6	36	.25	13	32	1.1
28	.24	75	.05	50	558	75	7.5	32	.65
29	.04	95	.01	21	300	17	5.7	34	.52
30	.03	82	.00	8.3	150	3.4	4.0	14	.15
31	---	---	---	3.6	60	.58	---	---	---
TOTAL	14.14	---	1.54	1999.55	---	14635.08	2425.39	---	21335.89

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	1.9	10	.05	.30	28	.02	.37	25	.0
2	.96	15	.04	15	45	1.8	.35	42	.0
3	.72	34	.07	22	65	3.9	.42	27	.0
4	.88	42	.10	6.0	40	.65	.42	34	.0
5	.96	72	.19	.89	27	.06	.20	77	.0
6	.88	61	.14	.14	68	.03	.20	105	.1
7	.58	68	.11	.13	82	.03	.47	55	.1
8	.27	100	.07	.12	88	.03	2.9	33	.3
9	.17	125	.06	.10	65	.02	6150	3740	73800
10	.16	101	.04	.10	65	.02	5730	3030	57500
11	.16	118	.05	.10	120	.03	510	805	1260
12	.16	80	.03	.10	152	.04	188	200	102
13	.16	62	.03	.10	152	.04	113	105	32
14	.16	58	.03	.11	100	.03	67	80	14
15	.17	68	.03	.14	70	.03	41	52	5.8
16	.22	70	.04	.15	80	.03	28	41	3.1
17	.26	71	.05	102	451	832	20	41	2.2
18	.28	88	.07	302	1370	1680	13	28	1.0
19	.30	70	.06	46	300	37	11	24	.7
20	.31	40	.03	16	218	9.4	8.4	20	.5
21	.26	19	.01	5.4	112	1.6	6.6	20	.4
22	.16	40	.02	4.1	56	.62	6.6	16	.3
23	.16	44	.02	3.4	52	.48	7.5	29	.6
24	.20	52	.03	3.0	38	.31	58	166	103
25	.35	34	.03	2.7	34	.25	165	534	287
26	.42	59	.07	2.1	34	.19	88	100	24
27	.46	45	.06	1.9	27	.14	411	1110	1900
28	.43	66	.08	.71	14	.03	1410	1810	6770
29	.49	38	.05	.36	14	.01	926	670	1680
30	.44	54	.06	.39	30	.03	512	310	429
31	.36	58	.06	.50	25	.03	---	---	---
TOTAL	13.39	---	1.78	536.04	---	2568.85	16475.43	---	143916.1

08127000 ELM CREEK AT BALLINGER, TX

LOCATION.--Lat 31°44'57", long 99°56'51", Runnels County, Hydrologic Unit 12090101, on right bank 1,000 ft (305 m) upstream from storage dam at Ballinger and 1.9 mi (3.1 km) upstream from mouth.

DRAINAGE AREA.--471 mi^2 (1,220 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1932 to current year.

REVISED RECORDS.--WSP 1442: 1935, 1946, 1954.

GAGE.--Water-stage recorder and masonry dam control. Datum of gage is 1,617.72 ft (493.081 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good except those below 100 ft^3/s (2.83 m^3/s), which are fair. Stage-discharge relation during period of low flow affected by wind action and occasional accumulation of drift on dam. During the current year, records furnished by the city of Winters show they diverted 539 acre-ft (665,000 m^3) from Lake Winters, capacity, 3,060 acre-ft (3.77 hm^3).

AVERAGE DISCHARGE.--48 years (water years 1933-80), 46.4 ft^3/s (1.314 m^3/s), 1.34 in/yr (34 mm/yr), 33,620 acre-ft/yr (41.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft^3/s (1,420 m^3/s) Oct. 13, 1957, gage height, 14.20 ft (4.328 m), from floodmark; no flow at times.

Highest stage not affected by backwater from the Colorado River since at least 1904 was that of Oct. 13, 1957, from information by local residents.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1906 reached a stage of 14.5 ft (4.42 m), affected by backwater from Colorado River.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,130 ft^3/s (202 m^3/s) Sept. 9 at 0945 hours, gage height, 7.11 ft (2.167 m), no other peak above base of 2,100 ft^3/s (59.5 m^3/s); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	2.5	1.2	.57	2.6	.00	9.7	1.2	.00	.00
2	.00	.00	.00	1.7	1.3	.35	1.8	.00	5.0	.88	.00	.00
3	.00	.00	.00	1.2	.93	.34	1.5	.00	2.7	.56	.00	.00
4	.00	.00	.00	.84	.81	.48	1.1	.00	2.1	.30	.00	.00
5	.00	.00	.00	.75	.86	.50	.79	.00	1.5	.15	.00	.00
6	.00	.00	.00	.84	.79	.54	.67	.00	.86	.07	.00	.00
7	.00	.00	.00	.79	.86	.59	.53	.00	.56	.02	.00	.00
8	.00	.00	.00	.74	3.8	.62	.40	.04	.50	.00	.00	.00
9	.00	.00	.00	.70	5.3	.64	.31	9.2	.92	.00	.00	2430
10	.00	.00	.00	.70	3.9	.68	.26	6.1	1.0	.00	.00	285
11	.00	.00	.00	.69	4.3	.77	.26	1.9	1.6	.00	.00	29
12	.00	.00	.00	.63	3.1	.77	.18	.96	1.8	.00	.00	11
13	.00	.00	.00	.68	2.3	.51	.25	.68	1.4	.00	.00	5.8
14	.00	.00	.00	.62	2.0	.50	.24	.56	.91	.00	.00	3.2
15	.00	.00	.00	.63	1.9	.60	.36	11	.55	.00	.00	1.7
16	.00	.00	.00	.63	1.5	.70	.40	48	.34	.00	.00	1.0
17	.00	.00	.00	.59	1.1	.67	.40	26	.17	.00	.00	.55
18	.00	.00	.00	.72	1.4	.52	.41	15	.11	.00	.00	.31
19	.00	.00	.00	.86	1.4	.55	.70	9.4	.07	.00	.00	.21
20	.00	.00	.00	.92	1.1	.56	.72	6.1	.05	.00	.00	.14
21	.00	.00	.00	.99	.89	.39	.45	6.8	.02	.00	.00	.10
22	.00	.00	.00	2.5	.80	.39	.29	3.3	335	.00	.00	.08
23	.00	.00	.00	2.4	.84	.44	.26	2.0	298	.00	.00	.08
24	.00	.00	.00	2.2	.93	.27	.21	1.6	58	.00	.00	.13
25	.00	.00	.00	1.8	.79	.22	.13	1.5	29	.00	.00	25
26	.00	.00	.00	1.7	.65	.35	.08	1.3	17	.00	.00	30
27	.00	.00	.00	1.3	.65	1.6	.05	2.8	10	.00	.00	15
28	.00	.00	.61	1.2	.70	23	.03	85	6.7	.00	.00	900
29	.00	.00	3.1	1.2	.81	12	.02	84	3.7	.00	.00	271
30	.00	.00	3.0	1.1	---	6.6	.01	32	2.0	.00	.00	90
31	.00	---	3.0	1.2	---	4.1	---	16	---	.00	.00	---
TOTAL	.00	.00	9.71	35.32	46.91	60.82	15.41	371.24	791.26	3.18	.00	4099.30
MEAN	.000	.000	.31	1.14	1.62	1.96	.51	12.0	26.4	.10	.000	137
MAX	.00	.00	3.1	2.5	5.3	23	2.6	85	335	1.2	.00	2430
MIN	.00	.00	.00	.59	.65	.22	.01	.00	.02	.00	.00	.00
CFSM	.000	.000	.001	.002	.003	.004	.001	.03	.06	.000	.000	.29
IN.	.00	.00	.00	.00	.00	.00	.00	.03	.06	.00	.00	.32
AC-FT	.00	.00	19	70	93	121	31	736	1570	6.3	.00	8130

CAL YR 1979 TOTAL 9897.29 MEAN 27.1 MAX 2190 MIN .00 CFSM .06 IN .78 AC-FT 19630
WTR YR 1980 TOTAL 5433.15 MEAN 14.8 MAX 2430 MIN .00 CFSM .03 IN .43 AC-FT 10780

08127000 ELM CREEK AT BALLINGER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to current year.
WATER TEMPERATURES: October 1967 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,220 micromhos Sept. 12, 17, 1970; minimum daily, 244 micromhos Aug. 4, 1978.
WATER TEMPERATURES: Maximum daily, 34.5°C Aug. 14, 1973; minimum daily, 0.0°C Jan. 8, 1968, Jan. 10, 13, 1973.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,890 micromhos May 8; minimum daily, 340 micromhos June 23.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
JAN 22...	1020	2.4	2750	--	8.0	810	650	160	100	260
FEB 28...	1000	1.1	3320	--	12.0	1000	850	180	140	300
APR 15...	1105	.39	3700	--	17.0	1100	940	190	150	360
MAY 27...	1210	1.0	2130	7.8	27.0	590	420	110	77	210
JUN 01...	1100	5.0	1480	--	--	390	230	75	50	170
JUL 08...	1130	.01	709	--	29.0	210	69	49	21	59
SEP 09...	0800	6400	393	--	--	150	47	45	10	13

DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
JAN 22...	4.0	8.9	200	0	410	610	.4	4.2	1650
FEB 28...	4.1	7.0	210	0	480	730	.6	1.4	1940
APR 15...	4.7	6.6	190	0	480	820	.8	.9	2100
MAY 27...	3.8	6.4	210	0	240	450	.7	5.0	1200
JUN 01...	3.7	6.9	200	0	160	290	.6	8.9	860
JUL 08...	1.8	6.7	170	0	60	100	.4	12	392
SEP 09...	.5	4.5	130	0	42	32	.3	8.9	220

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	0.00	*	*	0.00	*	0.00	*	0.00	*
NOV.	1979	0.00	*	*	0.00	*	0.00	*	0.00	*
DEC.	1979	9.71	2490	1460	38	500	13	330	8.6	720
JAN.	1980	35.32	3100	1850	176	670	64	440	42	910
FEB.	1980	46.91	3230	1930	245	710	90	460	59	960
MAR.	1980	60.82	3470	2090	343	780	128	510	84	1000
APR.	1980	15.41	3610	2190	91	820	34	540	22	1100
MAY	1980	371.24	2030	1180	1180	400	406	260	263	590
JUNE	1980	791.26	456	250	534	72	154	46	97	120
JULY	1980	3.18	651	358	3.1	100	0.9	66	0.6	180
AUG.	1980	0.00	*	*	0.00	*	0.00	*	0.00	*
SEPT	1980	4099.30	358	195	2160	55	610	35	385	97
TOTAL		5433.15	**	**	4770	**	1500	**	961	**
WTD. AVG.		15	577	325	**	100	**	66	**	160

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			---	2510	3170	3370	3510	---	1480	640		---
2			---	2900	3190	3400	3480	---	1450	642		---
3			---	2980	3210	3380	3570	---	1480	669		---
4			---	3190	3240	3420	3600	---	1470	672		---
5			---	3270	3260	3400	3620	---	1470	664		---
6			---	3180	3250	3410	3630	---	1480	677		---
7			---	3200	3270	3420	3670	---	1490	666		---
8			---	3230	3210	3440	3680	3890	1480	---		---
9			---	3270	3190	3430	3690	3320	1430	---		275
10			---	3250	3180	3450	3680	3640	1400	---		322
11			---	3280	3200	3460	3700	3570	1420	---		345
12			---	3360	3210	3490	3720	3520	1480	---		389
13			---	3300	3240	3470	3690	3540	1400	---		397
14			---	3380	3220	3460	3700	3600	1490	---		452
15			---	3310	3240	3480	3710	3500	1500	---		453
16			---	3320	3260	3490	3690	3380	1510	---		498
17			---	3410	3250	3470	3690	2900	1550	---		485
18			---	3340	3260	3490	3700	2560	1500	---		500
19			---	3300	3260	3500	3670	2350	1520	---		499
20			---	3260	3270	3510	3700	2200	1410	---		515
21			---	3240	3290	3520	3690	2210	1510	---		505
22			---	2980	3300	3510	3690	2090	470	---		481
23			---	3000	3290	3530	3680	2130	340	---		493
24			---	3020	3300	3520	3690	2150	378	---		498
25			---	3060	3310	3540	3710	2280	420	---		488
26			---	3110	3300	3530	3690	2110	504	---		672
27			---	3120	3310	3520	3730	2130	575	---		877
28			3150	3150	3320	3490	3670	1370	542	---		450
29			2400	3140	3330	3440	3750	1290	645	---		631
30			2460	3160	---	3430	3700	1390	603	---		722
31			2480	3150	---	3460	---	1470	---	---		---
MEAN			2620	3170	3250	3470	3670	2610	1180	661		498

08127000 ELM CREEK AT BALLINGER, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				---	5.0	5.0			---	29.0		
2				---	6.0	5.0			---	28.0		
3				---	10.0	5.0			---	29.0		
4				---	6.0	10.0			---	28.0		
5				---	9.0	11.0			---	29.0		
6				---	9.0	12.0			---	28.0		
7				---	10.0	11.0			---	---		
8				---	5.0	10.0			---	---		
9				---	5.0	10.0			---	---		
10				---	10.0	11.0			---	---		
11				---	5.0	10.0			---	---		
12				---	6.0	10.0			28.0	---		
13				---	10.0	10.0			27.0	---		
14				---	10.0	11.0			28.0	---		
15				---	9.0	9.0			29.0	---		
16				---	5.0	10.0			28.0	---		
17				---	7.0	5.0			29.0	---		
18				---	10.0	5.0			28.0	---		
19				---	9.0	12.0			29.0	---		
20				---	10.0	5.0			30.0	---		
21				---	9.0	10.0			---	---		
22				10.0	10.0	10.0			28.0	---		
23				7.0	12.0	11.0			25.0	---		
24				7.0	11.0	10.0			29.0	---		
25				10.0	10.0	10.0			28.0	---		
26				11.0	12.0	5.0			29.0	---		
27				6.0	12.0	9.0			30.0	---		
28				5.0	12.0	10.0			29.0	---		
29				5.0	5.0	5.0			28.0	---		
30				10.0	---	10.0			29.0	---		
31				9.0	---	5.0			---	---		
MEAN				8.0	8.5	9.0			28.5	28.5		

08127500 SOUTH CONCHO IRRIGATION CO.'S CANAL AT CHRISTOVAL, TX

LOCATION.--Lat 31°11'17", long 100°29'59", Tom Green County, Hydrologic Unit 12090102, on right bank at Christoval, 85 ft (26 m) downstream from point of diversion, and 100 ft (30 m) downstream from bridge on U.S. Highway 277.

PERIOD OF RECORD.--November 1939 to current year.

REVISED RECORDS.--WSP 1312: 1940-46.

GAGE.--Water-stage recorder. Datum of gage is 2,017.02 ft (614.788 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. The following table lists only irrigation water diverted from right bank of South Concho River 900 ft (274 m) upstream from station at Christoval (station 08128000). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--40 years (water years 1941-80), 6.74 ft^3/s (0.191 m^3/s), 4,880 acre-ft/yr (6.02 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily diversion for irrigation (excluding floodflow), 21 ft^3/s (0.59 m^3/s) June 27, 28, 1941, Sept. 18, 21, 1942; no flow Apr. 26 to July 9, 1957, Mar. 18 to Apr. 10, 1958, and Oct. 19 to Nov. 2, 1966.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	5.9	5.0	4.1	2.8	3.2	7.5	5.5	5.6	6.2	6.3	5.2
2	4.4	5.6	6.0	4.1	2.8	3.3	7.4	5.3	5.7	8.0	7.3	4.5
3	4.3	5.5	5.7	4.1	2.7	3.2	7.1	6.9	7.9	7.8	7.8	5.1
4	4.4	5.4	5.6	3.9	2.7	3.1	10	6.6	7.4	8.0	7.8	5.2
5	4.4	5.2	5.3	3.9	3.1	3.1	9.0	6.5	6.1	7.8	7.0	5.2
6	4.4	4.7	4.9	3.9	3.5	3.8	7.5	4.6	7.5	7.8	6.0	5.3
7	4.4	4.6	4.9	3.8	3.4	6.8	7.2	3.7	8.2	7.8	6.1	5.4
8	4.3	4.3	4.4	3.8	3.4	5.4	7.0	3.9	8.1	8.3	8.0	5.0
9	4.2	3.9	5.0	3.7	3.4	5.4	7.0	3.8	8.2	8.4	7.7	5.0
10	4.6	3.8	5.7	3.5	3.4	5.4	6.9	3.8	8.1	8.3	6.8	5.0
11	6.0	3.4	5.7	3.4	3.3	4.9	6.9	3.7	8.2	8.7	4.6	4.0
12	5.5	2.6	5.4	3.4	3.3	4.8	6.4	3.8	7.6	8.7	4.4	3.5
13	5.2	2.5	5.1	3.4	3.2	4.7	6.7	7.1	7.5	8.3	4.7	3.4
14	4.7	2.2	5.2	3.4	3.2	4.7	7.1	7.0	7.2	8.1	6.6	3.3
15	4.4	2.6	5.2	3.4	3.3	4.7	5.8	6.0	7.2	7.9	6.4	3.3
16	3.1	3.2	5.2	3.4	3.3	4.4	7.3	6.0	7.5	7.9	6.3	3.0
17	2.8	2.7	5.2	3.4	3.3	4.3	6.3	5.9	7.0	7.9	6.4	2.9
18	2.4	2.1	5.2	3.3	3.3	4.3	7.1	5.7	6.6	8.3	6.0	2.7
19	4.6	1.7	5.1	3.4	3.8	4.3	6.2	6.0	7.1	8.2	5.7	2.5
20	6.1	2.5	5.1	3.1	3.3	4.2	6.0	5.7	8.3	8.8	5.6	3.0
21	5.7	5.2	5.1	3.1	3.3	4.3	6.0	5.8	8.0	9.7	7.8	5.8
22	5.5	5.8	4.5	3.2	3.3	4.2	5.8	5.7	7.0	9.7	9.3	5.1
23	5.6	5.9	4.5	3.1	3.2	4.1	5.8	5.7	6.9	8.8	9.3	3.8
24	5.6	5.3	4.3	3.1	3.3	4.1	6.2	7.0	6.4	7.8	9.3	5.6
25	5.4	5.2	4.3	3.1	3.2	4.2	6.0	7.7	6.3	8.5	9.1	7.4
26	5.2	5.2	4.1	3.0	3.2	5.5	5.5	7.1	6.1	9.3	8.1	6.1
27	4.8	5.3	4.0	3.0	3.2	7.8	4.9	6.8	6.8	9.1	7.5	6.0
28	4.6	5.0	4.2	2.9	3.1	6.1	5.4	7.1	7.7	9.3	7.5	6.0
29	4.9	5.0	4.0	2.9	3.1	6.5	6.6	6.1	7.3	8.0	7.1	6.0
30	4.8	5.0	4.0	2.9	---	7.8	6.4	5.7	6.1	6.2	6.1	7.1
31	5.5	---	4.0	2.9	---	7.7	---	5.5	---	6.3	6.3	---
TOTAL	146.2	127.3	151.9	105.6	93.4	150.3	201.0	177.7	215.6	253.9	214.9	141.4
MEAN	4.72	4.24	4.90	3.41	3.22	4.85	6.70	5.73	7.19	8.19	6.93	4.71
MAX	6.1	5.9	6.0	4.1	3.8	7.8	10	7.7	8.3	9.7	9.3	7.4
MIN	2.4	1.7	4.0	2.9	2.7	3.1	4.9	3.7	5.6	6.2	4.4	2.5
AC-FT	290	252	301	209	185	298	399	352	428	504	426	280

CAL YR 1979 TOTAL 1700.80 MEAN 4.66 MAX 11 MIN .36 AC-FT 3370
WTR YR 1980 TOTAL 1979.20 MEAN 5.41 MAX 10 MIN 1.7 AC-FT 3930

08128000 SOUTH CONCHO RIVER AT CHRISTOVAL, TX

LOCATION.--Lat 31°11'16", long 100°30'09", Tom Green County, Hydrologic Unit 12090102, on left bank 1,000 ft (305 m) downstream from U.S. Highway 277 bridge, 9.5 mi (15.3 km) upstream from Twin Buttes Dam, and 85.0 mi (136.8 km) upstream from mouth.

DRAINAGE AREA.--409 mi^2 (1,059 km^2), of which 65 mi^2 (168 km^2) probably is noncontributing.

PERIOD OF RECORD.--February 1930 to current year.

REVISED RECORDS.--WSP 1118: 1943(M). WSP 1922: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,010.22 ft (612.715 m) National Geodetic Vertical Datum of 1929. Prior to July 17, 1930, nonrecording gage at same site and datum. July 17, 1930, to Nov. 15, 1977, water-stage recorder at site 160 ft (49 m) upstream at same datum.

REMARKS.--Records good. Low flow is materially affected by diversion to South Concho Irrigation Co.'s canal (station 08127500) 900 ft (270 m) upstream from station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--50 years, 33.4 ft^3/s (0.946 m^3/s), 24,200 acre-ft/yr (29.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 100,000 ft^3/s (2,830 m^3/s) July 23, 1938, gage height, 21.95 ft (6.690 m), from floodmark, from rating curve extended above 15,100 ft^3/s (428 m^3/s) on basis of slope-area measurement of 80,100 ft^3/s (2,270 m^3/s); no flow Feb. 28, Mar. 1, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1882, about 23 ft (7.0 m) Aug. 6, 1906, discharge 115,000 ft^3/s (3,260 m^3/s), from rating curve extended as noted above, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 160 ft^3/s (4.53 m^3/s) and maximum (*):

Date	Time	Discharge		Gage height		Date	Time	Discharge		Gage height	
		(ft^3/s)	(m^3/s)	(ft)	(m)			(ft^3/s)	(m^3/s)	(ft)	(m)
May 14	2030	4,790	136	7.84	2.390	Sept. 9	2145	2,880	81.6	6.48	1.975
June 21	0300	407	11.5	3.13	.954	Sept. 28	0615	1,330	37.7	4.77	1.454
Sept. 8	1300	*13,400	379	11.48	3.499	Sept. 29	2045	357	10.1	3.02	.920

Minimum discharge, 5.7 ft^3/s (0.16 m^3/s) Aug. 22-26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	12	14	16	16	15	12	11	22	16	11	8.1
2	13	11	14	16	16	15	12	12	22	14	9.7	9.0
3	13	11	14	16	16	17	12	11	19	14	8.3	9.0
4	14	11	15	16	16	17	9.3	11	18	13	8.3	8.8
5	14	11	15	15	16	17	9.4	11	18	13	8.5	8.3
6	15	11	15	15	16	17	9.8	12	17	13	9.6	8.3
7	15	11	15	15	14	14	9.4	13	16	13	10	7.6
8	16	11	15	15	17	14	9.0	15	16	12	9.6	1930
9	16	11	15	15	16	15	9.0	14	16	12	9.0	578
10	16	11	15	15	16	14	9.7	13	16	12	9.1	487
11	14	12	15	15	16	17	9.8	14	19	12	12	67
12	14	15	14	15	16	16	11	15	18	11	12	32
13	14	16	14	15	16	15	12	56	17	12	12	30
14	13	16	14	15	17	15	10	734	17	12	9.5	30
15	18	16	14	15	17	15	11	594	17	12	9.0	30
16	16	16	14	15	17	16	10	97	16	10	9.0	30
17	16	16	14	15	17	16	10	30	16	10	9.2	30
18	17	16	14	15	17	16	9.8	25	16	10	9.7	31
19	16	16	14	15	16	16	10	24	16	11	9.7	31
20	12	15	14	15	17	16	10	24	16	11	9.4	33
21	11	11	14	16	17	16	11	24	77	9.7	8.4	28
22	11	11	14	18	17	15	11	24	42	9.0	6.2	28
23	10	11	17	17	17	15	11	24	22	9.1	5.7	32
24	10	13	15	16	16	15	10	24	17	9.7	5.7	32
25	10	14	15	16	15	15	9.7	22	17	10	5.7	28
26	10	14	15	16	15	14	9.8	21	17	9.6	5.9	31
27	11	14	15	16	15	13	10	21	17	9.0	6.3	37
28	11	14	17	16	15	13	12	21	15	9.1	6.3	415
29	11	14	16	16	15	13	11	22	15	9.7	6.0	127
30	13	14	16	16	---	12	9.7	24	15	11	6.6	94
31	14	---	16	16	---	12	---	22	---	12	7.6	---
TOTAL	417	395	458	483	467	466	310.4	1985	602	350.9	265.0	4250.1
MEAN	13.5	13.2	14.8	15.6	16.1	15.0	10.3	64.0	20.1	11.3	8.55	142
MAX	18	16	17	18	17	17	12	734	77	16	12	1930
MIN	10	11	14	15	14	12	9.0	11	15	9.0	5.7	7.6
AC-FT	827	783	908	958	926	924	616	3940	1190	696	526	8430

CAL YR 1979 TOTAL 7140.0 MEAN 19.6 MAX 33 MIN 10 AC-FT 14160
WTR YR 1980 TOTAL 10449.4 MEAN 28.6 MAX 1930 MIN 5.7 AC-FT 20730

08128400 MIDDLE CONCHO RIVER ABOVE TANKERSLEY, TX

LOCATION.--Lat 31°25'38", long 100°42'39", Irion County, Hydrologic Unit 12090103, on left bank 0.3 mi (0.5 km) upstream from East Rocky Creek, 0.5 mi (0.8 km) southwest of Tullos Ranch Headquarters, 6.7 mi (10.8 km) northwest of Tankersley, and 20.9 mi (33.6 km) upstream from mouth.

DRAINAGE AREA.--2,436 mi² (6,309 km²), of which 1,055 mi² (2,732 km²) probably is noncontributing.

PERIOD OF RECORD.--March 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,986.47 ft (605.476 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--19 years, 16.5 ft³/s (0.467 m³/s), 11,950 acre-ft/yr (14.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,500 ft³/s (439 m³/s) Sept. 21, 1974, gage height, 24.98 ft (7.614 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, 29.5 ft (8.99 m) Sept. 26, 1936. A flood in 1900 reached the same stage from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,590 ft³/s (215 m³/s) Sept. 9 at 1400 hours, gage height, 18.87 ft (5.752 m), no other peak above base of 1,700 ft³/s (48.1 m³/s); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	1.0	3.0	2.3	2.5	2.7	1.2	.65	.00	.00
2	.00	.00	.00	1.2	3.2	2.2	2.8	2.5	1.2	1.5	.00	.00
3	.00	.00	.00	1.2	3.4	2.4	2.5	2.5	1.2	.44	.00	.00
4	.00	.00	.00	1.2	4.0	2.6	2.1	3.4	1.1	.32	.00	.00
5	.00	.00	.00	1.1	4.3	2.7	1.8	3.3	.91	.27	.00	.00
6	.00	.00	.00	1.0	4.4	2.7	2.3	2.9	.80	.21	.00	.00
7	.00	.00	.00	1.0	4.5	2.8	2.5	3.2	.86	.18	.00	.00
8	.00	.00	.00	1.0	4.8	2.6	2.1	3.1	3.8	.15	.00	.00
9	.00	.00	.00	1.1	4.6	2.4	1.9	2.9	47	.13	.00	1040
10	.00	.00	.00	1.3	4.5	2.6	2.6	3.2	2.5	.09	.00	52
11	.00	.00	.00	1.7	4.9	2.9	3.0	3.2	28	.07	.00	6.1
12	.00	.00	.00	1.7	4.4	3.6	2.8	2.8	3.3	.04	.00	5.0
13	.00	.00	.00	2.1	4.6	3.4	3.4	2.8	1.7	.01	.00	4.0
14	.00	.00	.00	1.9	4.7	3.0	3.8	2.7	1.2	.00	.00	3.2
15	.00	.00	.00	2.2	4.6	2.9	3.8	5.3	.97	.00	.00	3.0
16	.00	.00	.00	2.2	4.3	3.3	3.7	2.3	.84	.00	.00	3.1
17	.00	.00	.00	2.2	4.0	3.2	3.5	2.1	.72	.00	102	3.4
18	.00	.00	.00	2.1	4.1	2.6	3.3	2.0	.64	.00	66	3.6
19	.00	.00	.00	2.1	4.3	2.8	3.3	1.9	.57	.00	1.2	3.5
20	.00	.00	.00	2.2	4.2	3.1	3.5	1.9	.48	.00	.53	3.6
21	.00	.00	.00	2.2	3.9	2.8	3.5	1.8	45	.00	.36	4.7
22	.00	.00	.00	2.9	3.8	2.6	3.3	1.9	75	.00	.36	5.5
23	.00	.00	.00	2.6	3.3	2.9	4.0	1.9	29	.00	.31	21
24	.00	.00	.00	4.0	3.1	3.0	4.0	1.7	4.6	.00	.27	13
25	.00	.00	.00	3.8	3.1	2.7	3.7	1.7	2.3	.00	.24	7.8
26	.00	.00	.05	3.3	3.2	2.9	3.2	1.5	1.6	.00	.20	3.3
27	.00	.00	.27	3.1	3.2	3.5	2.4	1.3	1.2	.00	.21	95
28	.00	.00	1.2	3.0	3.0	3.0	2.2	1.6	.90	.00	.13	190
29	.00	.00	.52	3.0	2.8	3.0	2.4	1.4	.62	.00	.10	30
30	.00	.00	.55	3.3	---	2.9	2.5	1.3	.45	.00	.05	13
31	.00	---	.66	3.3	---	2.8	---	1.3	---	.00	.00	---
TOTAL	.00	.00	3.25	66.0	114.2	88.2	88.4	74.1	259.66	4.06	171.96	1513.80
MEAN	.000	.000	.10	2.13	3.94	2.85	2.95	2.39	8.66	.13	5.55	50.5
MAX	.00	.00	1.2	4.0	4.9	3.6	4.0	5.3	75	1.5	102	1040
MIN	.00	.00	.00	1.0	2.8	2.2	1.8	1.3	.45	.00	.00	.00
AC-FT	.00	.00	6.4	131	227	175	175	147	515	8.1	341	3000

CAL YR 1979 TOTAL 2435.97 MEAN 6.67 MAX 540 MIN .00 AC-FT 4830
WTR YR 1980 TOTAL 2383.63 MEAN 6.51 MAX 1040 MIN .00 AC-FT 4730

08129300 SPRING CREEK ABOVE TANKERSLEY, TX

LOCATION.--Lat 31°19'48", long 100°38'24", Tom Green County, Hydrologic Unit 12090102, on right bank at downstream side of bridge on Farm Road 2335, 1.4 mi (2.3 km) south of Tankersley, and 2.5 mi (4.0 km) upstream from Dove Creek.

DRAINAGE AREA.--424 mi² (1,098 km²), of which 28 mi² (73 km²) probably is noncontributing.

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,964.72 ft (598.847 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 10, 1960, nonrecording gage at same site and datum.

REMARKS.--Records good. Many small diversions above station for irrigation. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--20 years, 14.4 ft³/s (0.408 m³/s), 10,430 acre-ft/yr (12.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,400 ft³/s (861 m³/s) Aug. 12, 1971, gage height, 16.57 ft (5.051 m); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Outstanding floods since at least 1853 occurred in 1882 and 1884. Flood of Oct. 3, 1959, reached a stage of 18.4 ft (5.61 m), from floodmarks. At former gage near Tankersley 8 mi (13 km) downstream, the flood of Oct. 3, 1959, had a discharge of 82,100 ft³/s (2,330 m³/s) and was found to be about 3 ft (0.9 m) lower than the 1882 flood, the greatest at that location since at least 1853.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,270 ft³/s (149 m³/s) May 15 at 1200 hours, gage height, 8.93 ft (2.722 m), no other peak above base of 400 ft³/s (11.3 m³/s); minimum daily, 0.07 ft³/s (0.002 m³/s) Sept. 3-8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.18	3.9	9.0	12	11	6.9	5.0	4.4	5.4	1.8	.14	.08
2	.18	6.6	8.3	12	11	7.2	4.6	5.7	4.6	1.2	.14	.08
3	.17	8.2	8.7	12	11	7.6	1.8	6.2	4.1	.70	.14	.07
4	.17	8.1	9.6	13	11	7.8	1.1	8.5	4.4	.52	.13	.07
5	.17	6.8	10	12	10	3.8	.91	10	3.7	.44	.13	.07
6	.16	7.0	9.0	13	11	6.4	1.8	9.5	2.1	.37	.13	.07
7	.17	6.6	8.0	12	11	6.7	8.8	6.7	1.6	.33	.12	.07
8	.17	7.9	6.7	12	14	5.8	5.8	5.7	2.1	.28	.12	.07
9	.15	6.3	8.9	13	12	8.7	3.9	6.7	5.7	.23	.12	4.6
10	.15	6.2	8.7	13	11	9.0	3.4	7.2	6.3	.21	.13	4.6
11	.17	6.2	9.1	12	12	7.0	3.7	6.9	13	.21	.18	1.6
12	.18	8.4	8.5	12	11	8.4	3.8	5.8	6.3	.20	.25	3.9
13	.16	6.9	10	12	8.2	3.8	6.2	7.4	4.7	.19	.21	4.2
14	.17	7.2	12	12	6.9	4.0	6.4	8.6	4.4	.19	.19	4.0
15	81	6.4	12	12	5.7	4.3	4.6	977	5.7	.18	.17	4.0
16	8.6	6.6	13	12	4.1	7.2	4.0	118	4.5	.18	.14	3.6
17	4.2	6.4	11	12	4.6	5.6	5.6	42	3.4	.17	.17	3.6
18	4.7	5.9	10	12	5.4	3.6	4.5	33	3.5	.17	.18	3.5
19	5.9	5.3	11	12	6.6	3.6	6.7	29	3.3	.16	.14	1.9
20	5.0	4.0	11	12	6.8	5.3	6.2	25	1.9	.17	.13	.65
21	6.4	5.2	10	12	5.9	3.5	4.8	22	1.3	.18	.12	.34
22	5.6	4.1	11	15	5.8	4.8	3.3	19	34	.17	.11	.24
23	5.1	6.7	16	13	5.9	7.6	1.6	19	10	.17	.11	.22
24	6.0	7.4	12	11	5.6	1.7	1.4	18	5.8	.16	.11	.23
25	6.8	7.5	10	11	6.4	3.1	1.4	15	4.7	.16	.10	.27
26	6.8	5.5	11	10	7.7	2.9	1.5	15	4.2	.16	.10	.31
27	5.3	5.1	12	10	7.6	6.0	3.7	14	3.8	.16	.09	28
28	3.8	5.2	15	11	6.4	6.3	4.1	12	3.3	.16	.09	69
29	3.8	7.4	14	11	7.2	5.1	2.2	7.9	2.8	.15	.09	27
30	7.1	8.5	12	11	---	5.4	2.1	6.5	2.8	.15	.09	16
31	3.8	---	12	11	---	8.1	---	5.9	---	.14	.09	---
TOTAL	172.25	193.5	329.5	376	242.8	177.2	114.91	1477.6	163.4	9.66	4.16	182.34
MEAN	5.56	6.45	10.6	11.9	8.37	5.72	3.83	47.7	5.45	.31	.13	6.08
MAX	81	8.5	16	15	14	9.0	8.8	977	34	1.8	.25	69
MIN	.15	3.9	6.7	10	4.1	1.7	.91	4.4	1.3	.14	.09	.07
AC-FT	342	384	654	734	482	351	228	2930	324	19	8.3	362

CAL YR 1979 TOTAL 2967.62 MEAN 8.13 MAX 81 MIN .10 AC-FT 5890
WTR YR 1980 TOTAL 3437.32 MEAN 9.39 MAX 977 MIN .07 AC-FT 6820

08130500 DOVE CREEK AT KNICKERBOCKER, TX

LOCATION.--Lat 31°16'24", long 100°37'45", Tom Green County, Hydrologic Unit 12090102, on right bank at right end of bridge on Farm Road 2335, 0.4 mi (0.6 km) west of Knickerbocker, and 5.4 mi (8.7 km) upstream from mouth.

DRAINAGE AREA.--229 mi^2 (593 km^2), of which 31 mi^2 (80.3 km^2) probably is noncontributing.

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,001.45 ft (610.042 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 10, 1960, nonrecording gage at present site and datum.

REMARKS.--Records good except those for May 16 to June 18, which are poor. Flow is partly regulated by storage and diversion from two small channel dams upstream and by small diversions upstream for irrigation. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--20 years, 17.9 ft^3/s (0.507 m^3/s), 12,970 acre-ft/yr (26.0 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,500 ft^3/s (496 m^3/s) Aug. 12, 1971, gage height, 20.66 ft (6.297 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1882, 30.4 ft (9.27 m) in 1906 and Oct. 3, 1959; floods in 1882 and 1884 reached about the same stage, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft^3/s (2.83 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 15	0930	*13,800	391	a18.52	5.645
Sept. 9	1530	399	11.3	6.00	1.829

a From floodmark.

Minimum discharge, 3.4 ft^3/s (0.096 m^3/s) Apr. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	13	16	14	14	14	14	9.7	10	8.5	5.3	14
2	9.7	13	16	14	14	14	12	6.8	10	8.0	5.5	11
3	9.0	13	16	14	14	14	10	6.8	10	7.6	6.6	7.3
4	9.7	14	16	14	14	14	9.5	11	10	6.8	7.5	7.8
5	9.9	14	16	14	14	12	6.5	9.9	10	6.2	6.4	5.7
6	9.9	13	16	14	14	13	6.4	8.8	10	5.8	5.1	5.6
7	9.3	14	16	14	14	14	6.1	12	10	5.5	5.8	5.6
8	8.0	14	16	14	15	13	3.7	12	10	5.5	6.9	8.8
9	8.0	14	16	14	15	14	5.5	11	10	5.4	10	80
10	8.8	15	16	14	15	13	5.5	9.6	10	5.0	17	23
11	9.1	15	16	14	15	11	7.7	8.5	10	5.0	18	11
12	8.5	15	16	14	15	8.8	9.3	12	10	5.1	19	9.7
13	9.0	16	16	14	15	7.9	13	8.3	10	4.5	16	9.1
14	11	16	16	14	15	9.1	10	11	10	4.5	14	9.0
15	13	15	16	14	15	9.3	8.2	1860	10	4.8	12	9.1
16	10	15	15	14	15	9.7	9.0	32	10	6.1	13	9.0
17	10	15	15	14	15	8.5	9.7	12	10	6.9	23	8.8
18	10	15	15	14	15	8.5	9.6	11	10	7.7	17	8.8
19	10	15	15	14	16	8.4	11	10	10	8.4	15	8.8
20	11	15	15	17	15	8.7	12	10	11	13	14	8.2
21	11	15	14	15	15	9.1	12	10	15	20	14	7.9
22	12	14	14	19	16	9.2	12	10	26	19	14	7.8
23	12	15	21	15	16	11	12	10	12	12	15	8.2
24	12	15	14	15	16	12	11	10	12	9.1	17	8.9
25	12	16	13	15	16	13	12	10	12	7.9	17	11
26	12	15	13	14	14	13	12	10	12	7.6	17	11
27	12	15	13	14	15	13	12	10	11	8.6	16	15
28	12	15	16	14	15	14	12	10	10	8.2	16	31
29	12	15	14	14	14	15	10	10	9.7	7.0	15	12
30	13	15	13	14	---	15	11	10	9.9	7.0	15	12
31	13	---	14	14	---	15	---	10	---	6.2	16	---
TOTAL	326.9	439	474	446	431	364.2	294.7	2182.4	330.6	242.9	409.1	385.1
MEAN	10.5	14.6	15.3	14.4	14.9	11.7	9.82	70.4	11.0	7.84	13.2	12.8
MAX	13	16	21	19	16	15	14	1860	26	20	23	80
MIN	8.0	13	13	14	14	7.9	3.7	6.8	9.7	4.5	5.1	5.6
AC-FT	648	871	940	885	855	722	585	4330	656	482	811	764

CAL YR 1979 TOTAL 5438.7 MEAN 14.9 MAX 23 MIN 5.5 AC-FT 10790
WTR YR 1980 TOTAL 6325.9 MEAN 17.3 MAX 1860 MIN 3.7 AC-FT 12550

08131200 TWIN BUTTES RESERVOIR NEAR SAN ANGELO, TX

LOCATION.--Lat 31°22'55", long 100°32'17", Tom Green County, Hydrologic Unit 12090102, in outlet control tower at Twin Buttes Dam on Middle Concho River, Spring Creek, and South Concho River, 3.8 mi (6.1 km) upstream from Lake Nasworthy Dam, 8.1 mi (13.0 km) southwest of San Angelo, and 75.0 mi (120.7 km) upstream from mouth.

DRAINAGE AREA.--3,724 mi^2 (9,645 km^2), of which 1,178 mi^2 (3,051 km^2) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder on Middle Concho-Spring Creek pool and nonrecording gage on South Concho pool. Datum of gages is National Geodetic Vertical Datum of 1929.

REMARKS.--The reservoir is formed by a rolled earthfill dam 8.1 mi (13.0 km) long, including a 200-foot-wide (61 m) uncontrolled off-channel concrete gravity spillway with ogee weir section. Outlet works consist of three 15.5-foot (4.7 m) concrete conduits, each is controlled by a 12.0- by 15.0-foot (3.7 by 4.6 m) fixed-wheel gate and a 12.0- by 15.0-foot (3.7 by 4.6 m) radial gate, located in Middle Concho-Spring Creek pool. Low-flow releases are made through 2.0- by 2.0-foot (0.6 by 0.6 m) gates located in the center of three fixed-wheel gates. The South Concho and Middle Concho-Spring Creek pools are connected by a 3.22-mile (5.18 km) equalizing channel. At an elevation of 1,926.5 ft (587.20 m) the two pools join to form one lake. Below elevation of 1,926.5 ft (587.20 m), daily contents are obtained from capacity tables for South Concho and Middle Concho-Spring Creek pools and summed to obtain combined daily contents. Lake level elevations below 1,926.5 ft (587.20 m) represent Middle Concho-Spring Creek pool only. Deliberate impoundment of water began on Dec. 1, 1962; dam was completed Feb. 13, 1963. Capacity curve is based on a survey made in 1958. Reservoir was built for flood control, irrigation, and municipal uses. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam..	1,991.0	-
Crest of spillway...	1,969.1	640,600
Top of conservation storage.......................................	1,940.2	186,200
Bottom of equalizing channel (Middle Concho-Spring Creek pool).......	1,926.5	86,480
Dead storage in South Concho pool.................................	1,926.5	5,440
Lowest gated outlet (invert at Middle Concho-Spring Creek pool)......	1,885.0	3,750

COOPERATION.--Capacity curve furnished by the U.S. Water and Power Resources Services.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 205,200 acre-ft (253 hm^3) May 12, 1975, elevation, 1,942.20 ft (591.983 m); minimum since first appreciable storage, 2,120 acre-ft (2.61 hm^3) Apr. 15, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum combined daily contents, 87,150 acre-ft (107 hm^3) Oct. 1; minimum, 55,880 acre-ft (68.9 hm^3) Sept. 7.

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87150	83110	81130	82680	83670	83570	81160	75540	84150	80910	66210	57380
2	86980	83060	81070	82700	83670	83530	81040	75210	83990	80560	65760	57120
3	86680	82940	81030	82770	83670	83490	80890	75030	83780	80210	65320	56840
4	86510	82900	81030	82760	83710	83260	80760	74840	83590	79850	64900	56550
5	86270	82740	80940	82830	83650	83230	80630	74520	83380	79460	64420	56330
6	86050	82630	80950	82800	83700	83210	80470	74190	83170	79060	64000	56080
7	85840	82610	80920	82830	83720	83140	80150	73900	82940	78660	63570	55880
8	85600	82570	80880	82870	83840	83060	79990	73660	83260	78310	63150	56300
9	85270	82410	80880	82960	83970	83070	79780	73350	83340	77890	62700	64420
10	85110	82340	80990	83000	84030	82990	79550	73050	83360	77470	62210	68380
11	84950	82270	80910	82900	84030	83070	79150	72840	83970	77020	62220	68660
12	84750	82200	80990	82980	84060	83000	79120	72600	83950	76540	62240	68550
13	84540	82130	81050	82940	84130	82890	79060	72810	83830	76060	62000	68550
14	84390	82060	81150	82980	84120	82810	78840	73080	83740	75510	61610	68500
15	84910	82020	81160	83020	84120	82810	78690	84620	83540	74920	61220	68540
16	84850	81980	81080	83060	84120	82780	78470	84940	83320	74340	60760	68510
17	84810	81990	81080	83070	84120	82630	78390	84940	83060	73760	60990	68440
18	84720	81910	81070	83110	84250	82560	78230	85030	82850	73150	61080	68450
19	84670	81910	81070	83150	84200	82550	78080	85050	82620	72570	61050	68430
20	84540	81950	81060	83270	84210	82330	77970	85250	82250	72040	60840	68380
21	84450	81810	81140	83310	84130	82250	77820	85370	81890	71490	60580	68350
22	84230	81760	81140	83540	84130	82160	77670	85410	82690	71050	60290	68300
23	84110	81680	81570	83580	84080	82000	77550	85340	82820	70560	60000	68340
24	83990	81600	81650	83630	84040	81860	77400	85270	82780	70070	59730	68410
25	83910	81520	81730	83600	83960	81780	77120	85210	82620	69550	59470	68600
26	83830	81560	81730	83590	83960	81710	76820	85110	82390	69050	59150	68750
27	83710	81340	81830	83580	83920	81760	76600	84920	82160	68540	58890	69510
28	83630	81230	82380	83580	83860	81690	76350	84790	81870	68050	58590	71180
29	83670	81200	82460	83660	83690	81540	76100	84650	81540	67480	58320	71960
30	83410	81170	82530	83630	---	81380	75820	84490	81150	67050	58010	72320
31	83230	---	82610	83630	---	81310	---	84320	---	66630	57670	---
MAX	87150	83110	82610	83660	84250	83570	81160	85410	84150	80910	66210	72320
MIN	83230	81170	80880	82680	83650	81310	75820	72600	81150	66630	57670	55880
(†)	1924.49	1923.49	1924.28	1924.55	1924.58	1923.99	1922.53	1924.75	1923.95	1919.90	1916.96	1921.36
(‡)	-4140	-2060	+1440	+1020	+60	-2380	-5490	-8500	-3170	-14520	-8960	-14650

CAL YR 1979 MAX 129500 MIN 80880 ‡ -36590
WTR YR 1980 MAX 87150 MIN 55880 ‡ -150505

† Elevation, in feet, at end of month, for Middle Concho-Spring Creek pool.
‡ Change in contents, in acre-feet.

08131200 TWIN BUTTES RESERVOIR NEAR SAN ANGELO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
NOV 13...	1330	803	16.5	230	71	43	29	76	2.2
JUN 19...	0745	773	26.5	220	67	43	28	70	2.0

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
NOV 13...	6.0	190	0	69	120	.5	14	451
JUN 19...	6.9	190	0	65	120	.5	12	439

08131400 PECAN CREEK NEAR SAN ANGELO, TX

LOCATION.--Lat 31°18'32", long 100°26'44", Tom Green County, Hydrologic Unit 12090102, on left bank 200 ft (61 m) upstream from U.S. Highway 277, 3.6 mi (5.8 km) upstream from mouth, and 10.5 mi (16.9 km) south of San Angelo.

DRAINAGE AREA.--83.2 mi^2 (215.5 km^2).

PERIOD OF RECORD.--June 1961 to current year.

REVISED RECORDS.--WDR TX-75-3: 1971, 1972(M).

GAGE.--Water-stage recorder, crest-stage gages, and concrete control. Datum of gage is 1,930.72 ft (588.483 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 30, 1968, at site 1.2 mi (1.9 km) downstream at datum 20.21 ft (6.160 m) lower.

REMARKS.--Records good. No known diversions above station. Two observations of water temperature were made during the current year.

AVERAGE DISCHARGE.--19 years, 1.51 ft^3/s (0.0428 m^3/s), 0.25 in/yr (6 mm/yr), 1,090 acre-ft/yr (1.34 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,600 ft^3/s (725 m^3/s) Sept. 8, 1980, gage height, 10.63 ft (3.240 m); (510 m^3/s) maximum gage height, 11.15 ft (3.399 m) Sept. 24, 1964, site and datum then in use; no flow most of time each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1908, 14.36 ft (4.377 m), former site and datum, Sept. 15, 1936, discharge 30,500 ft^3/s (864 m^3/s), by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft^3/s (2.83 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Oct. 15	1000	134	3.79	1.06	0.323	Sept. 9	2030	8,850	251	6.10	1.859
June 22	0700	157	4.45	a1.11	0.338	Sept. 28	0500	1,460	41.3	2.54	0.774
Sept. 28	1130	*25,600	725	10.63	3.240						

a From floodmark.

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3940
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1210
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	173
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	10
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	6.0
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.4
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.7
15	21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.7
16	.43	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.4
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.0
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.0
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.10
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
22	.00	.00	.00	.00	.00	.00	.00	.00	26	.00	.00	.01
23	.00	.00	.00	.00	.00	.00	.00	.00	4.2	.00	.00	.10
24	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	1.0
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.0
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.7
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	6.5
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	258
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	45
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	16
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	21.43	.00	.00	.00	.00	.00	.00	.00	30.22	.00	.00	5684.63
MEAN	.69	.000	.000	.000	.000	.000	.000	.000	1.01	.000	.000	189
MAX	21	.00	.00	.00	.00	.00	.00	.00	26	.00	.00	3940
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
CFSM	.008	.000	.000	.000	.000	.000	.000	.000	.01	.000	.000	2.27
IN.	.01	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	2.54
AC-FT	43	.00	.00	.00	.00	.00	.00	.00	60	.00	.00	11280

CAL YR 1979 TOTAL 32.29 MEAN .088 MAX 21 MIN .00 CFSM .001 IN .01 AC-FT 64
WTR YR 1980 TOTAL 5736.28 MEAN 15.7 MAX 3940 MIN .00 CFSM .19 IN 2.56 AC-FT 11380

08131600 TOM GREEN COUNTY WATER CONTROL AND IMPROVEMENT DISTRICT NO. 1 CANAL NEAR SAN ANGELO, TX

LOCATION.--Lat 31°24'58", long 100°23'29", Tom Green County, Hydrologic Unit 12090105, on left bank 1,900 ft (579 m) downstream from VFW Highway, 4.2 mi (6.8 km) southeast of San Angelo, and 6.1 mi (9.8 km) downstream from Lake Nasworthy.

PERIOD OF RECORD.--March 1963 to current year.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 1,855.33 ft (565.505 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation reference mark).

REMARKS.--Records good. Discharge represents water released from Twin Buttes Reservoir (station 08131200) through Lake Nasworthy (station 08132000), principally for irrigation. Local flood runoff is excluded. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--8 years (water years 1964-71), no flow; 9 years (water years 1972-80), 19.6 ft³/s (0.555 m³/s), 14,200 acre-ft/yr (17.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 129 ft³/s (3.65 m³/s) May 7, 1980; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	.00	.00	.00	.00	.00	23	74	7.6	41	59	38
2	.32	.00	.00	.00	.00	.00	23	82	7.6	46	56	29
3	.00	.00	.00	.00	.00	.00	27	96	7.6	37	47	29
4	.00	.00	.00	.00	.00	.00	28	101	5.5	40	50	31
5	.00	.00	.00	.00	.00	.00	27	110	9.5	42	50	26
6	.00	.00	.00	.00	.00	.00	26	124	20	42	47	25
7	.00	.00	.00	.00	.00	.00	26	129	27	41	57	23
8	.00	.00	.00	.00	.00	.00	26	96	41	53	67	20
9	.00	.00	.00	.00	.00	.00	31	71	33	58	64	19
10	.00	.00	.00	.00	.00	.00	31	75	21	61	53	2.8
11	.00	.00	.00	.00	.00	.00	26	73	14	67	47	.03
12	.00	.00	.00	.00	.00	.00	22	63	.05	71	41	.00
13	.00	.00	.00	.00	.00	.00	19	31	.00	72	43	.00
14	.00	.00	.00	.00	.00	.00	16	.03	.00	95	61	.00
15	.00	.00	.00	.00	.00	.00	13	1.0	2.2	116	73	.00
16	.00	.00	.00	.00	.00	.00	12	.06	15	126	71	.00
17	.00	.00	.00	.00	.00	.00	12	.00	37	126	67	.00
18	.00	.00	.00	.00	.00	.00	12	.00	50	121	63	.00
19	.00	.00	.00	.00	.00	.00	12	.39	63	117	64	.00
20	.00	.00	.00	.00	.00	.00	13	29	63	110	61	.00
21	.00	.00	.00	.00	.00	.00	21	38	50	110	63	.00
22	.00	.00	.00	.00	.00	.00	24	31	41	110	65	.00
23	.00	.00	.00	.00	.00	.00	38	22	30	119	64	.00
24	.00	.00	.00	.00	.00	.58	46	17	25	114	63	.00
25	.00	.00	.00	.00	.00	15	46	17	24	111	59	.00
26	.00	.00	.00	.00	.00	14	46	18	24	108	60	.00
27	.00	.00	.00	.00	.00	19	47	17	24	98	61	.00
28	.00	.00	.00	.00	.00	16	56	16	24	96	61	.00
29	.00	.00	.00	.00	.00	16	63	12	24	88	56	.00
30	.00	.00	.00	.00	---	16	71	9.3	37	74	54	.00
31	.00	---	.00	.00	---	16	---	7.6	---	61	51	---
TOTAL	3.72	.00	.00	.00	.00	112.58	883	1360.38	727.05	2571	1798	242.83
MEAN	.12	.000	.000	.000	.000	3.63	29.4	43.9	24.2	82.9	58.0	8.09
MAX	3.4	.00	.00	.00	.00	19	71	129	63	126	73	38
MIN	.00	.00	.00	.00	.00	.00	12	.00	.00	37	41	.00
AC-FT	7.4	.00	.00	.00	.00	223	1750	2700	1440	5100	3570	482

CAL YR 1979 TOTAL 9337.56 MEAN 25.6 MAX 123 MIN .00 AC-FT 18520
WTR YR 1980 TOTAL 7698.56 MEAN 21.0 MAX 129 MIN .00 AC-FT 15270

08132000 LAKE NASWORTHY NEAR SAN ANGELO, TX

LOCATION.--Lat 31°23'19", long 100°28'41", Tom Green County, Hydrologic Unit 12090102, on left bank 250 ft (76 m) upstream from Nasworthy Dam on South Concho River, 3.8 mi (6.1 km) downstream from Twin Buttes Dam, 6.0 mi (9.7 km) southwest of San Angelo, and 68.9 mi (110.9 km) upstream from mouth.

DRAINAGE AREA.--3,833 mi² (9,927 km²), of which 3,724 mi² (9,645 km²) is above Twin Buttes Reservoir and 1,178 mi² (3.051 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1930 to current year. Prior to October 1969, monthend contents only.

GAGE.--Water-stage recorder. Datum of gage is 1,840.00 ft (560.832 m) National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by a 6,090-foot (1,860 m) dam with a 5,590-foot (1,700 m) earthen section that has an earthen spillway 300 ft (91 m) long, a concrete spillway 475 ft (145 m) long with a bank of fifteen 25.0- by 18.0-foot (5.5 by 7.6 m) tainter gates, and a 25.0-by 3.0-foot (7.16 by 0.9 m) collapsible floodgate. The dam was completed and storage began Mar. 28, 1930. Since July 1966, West Texas Utilities Co. has operated a steam generating powerplant on the lake. Since September 1962, the lake has been almost totally controlled by releases or pumpage from Twin Buttes Reservoir (station 08131200). Siltation surveys in December 1938 and May 1953 by the Soil Conservation Service show that 1,191 acre-ft (1.47 hm³) of silt was deposited from March 1930 to December 1938 and an additional 1,023 acre-ft (1.26 hm³) was deposited from December 1938 to May 1953, totaling 2,214 acre-ft (2.73 hm³). Water is used for part of San Angelo municipal supply and for irrigation east of San Angelo (see station 08131600 for diversions). The capacity curve is based on a survey by the Soil Conservation Service in 1953 and has been used since 1955. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Top of dam	43.5	-
Crest of spillway (300 ft)	39.1	27,810
Top of gates	33.2	13,990
Top of collapsible floodgate	32.2	12,390
Lowest outlet to canal (invert)	27.5	6,370
Crest of spillway (tainter gates sill)	15.3	435
Lowest gated outlet (invert)	-4.0	0

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 26,900 acre-ft (33.2 hm³) Sept. 15, 1936, gage height, 38.36 ft (11.692 m); minimum, 209 acre-ft (0.258 hm³) Aug. 22, 1964, gage height, 13.21 ft (4.026 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 12,930 acre-ft (15.9 hm³) Sept. 9 at 2230 hours, gage height, 32.54 ft (9.918 m); minimum, 10,230 acre-ft (12.6 hm³) Aug 13, gage height, 30.83 ft (9.397 m).

Capacity table (gage height, in feet, and total contents, in acre-feet)

30.0	9,170
33.0	13,670

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10550	10440	10390	10520	10300	10340	10430	10360	10530	10400	10490	10330
2	10610	10440	10390	10470	10300	10370	10410	10360	10580	10390	10460	10340
3	10580	10440	10390	10440	10320	10390	10390	10430	10610	10390	10430	10370
4	10600	10470	10400	10400	10320	10370	10360	10470	10660	10400	10400	10390
5	10600	10430	10390	10410	10320	10410	10340	10500	10660	10400	10390	10390
6	10600	10430	10400	10360	10320	10440	10320	10440	10660	10390	10370	10370
7	10600	10440	10400	10360	10330	10460	10300	10400	10650	10400	10370	10370
8	10580	10440	10410	10370	10340	10460	10330	10330	10710	10370	10390	12290
9	10520	10410	10430	10360	10370	10490	10360	10400	10820	10370	10440	12420
10	10530	10410	10470	10370	10360	10470	10390	10440	10660	10390	10530	12470
11	10550	10410	10430	10340	10330	10520	10330	10460	10650	10410	10550	12440
12	10530	10410	10490	10360	10340	10490	10440	10470	10530	10430	10330	12390
13	10530	10400	10520	10360	10340	10470	10530	10470	10490	10440	10270	12330
14	10530	10400	10550	10370	10340	10460	10580	10390	10440	10460	10330	12250
15	10680	10410	10570	10390	10330	10460	10610	11050	10400	10490	10400	12180
16	10690	10430	10550	10370	10320	10470	10600	10950	10400	10520	10440	12100
17	10680	10460	10550	10370	10330	10430	10600	10870	10390	10520	10930	12010
18	10690	10470	10570	10370	10330	10410	10600	10790	10360	10530	10840	11940
19	10680	10470	10580	10370	10320	10440	10610	10710	10340	10570	10580	11860
20	10660	10500	10580	10390	10290	10370	10610	10690	10360	10610	10490	11750
21	10630	10440	10610	10390	10290	10370	10600	10530	10370	10650	10490	11640
22	10570	10440	10610	10460	10300	10390	10570	10410	10630	10600	10520	11540
23	10550	10430	10730	10430	10300	10360	10520	10360	10550	10530	10530	11510
24	10530	10410	10680	10410	10320	10330	10410	10330	10400	10500	10570	11510
25	10530	10400	10630	10400	10320	10330	10370	10300	10340	10490	10570	11540
26	10520	10430	10580	10360	10330	10360	10340	10300	10360	10460	10520	11560
27	10500	10370	10530	10340	10340	10430	10360	10330	10340	10460	10470	12050
28	10500	10370	10680	10330	10360	10430	10390	10370	10300	10490	10430	12610
29	10520	10370	10630	10330	10330	10430	10400	10410	10320	10550	10390	12660
30	10490	10370	10600	10320	---	10440	10400	10460	10320	10570	10340	12690
31	10460	---	10550	10290	---	10440	---	10500	---	10520	10320	---
MAX	10690	10500	10730	10520	10370	10520	10610	11050	10820	10650	10930	12690
MIN	10460	10370	10390	10290	10290	10330	10300	10300	10300	10370	10270	10330
(†)	30.99	30.93	31.05	30.87	30.90	30.98	30.95	31.02	30.89	31.03	30.89	32.39
(‡)	-90	-90	+180	-260	+40	+110	-40	+100	-180	+200	-200	+2370

CAL YR 1979 MAX 11000 MIN 10270 ‡ -80
WTR YR 1980 MAX 12690 MIN 10270 ‡ +2140

† Gage height, in feet, at end of month.
‡ Change in contents, in acre-feet.

08132000 LAKE NASWORTHY NEAR SAN ANGELO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
NOV									
13...	1510	977	15.5	260	86	49	33	100	2.7
JUN									
19...	0915	1040	28.0	260	89	52	32	110	3.0

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
NOV								
13...	6.1	210	0	84	150	.5	17	543
JUN								
19...	6.9	210	0	85	190	.6	16	596

08133500 NORTH CONCHO RIVER AT STERLING CITY, TX

LOCATION.--Lat 31°49'48", long 100°59'36", Sterling County, Hydrologic Unit 12090104, on right bank 100 ft (30 m) upstream from bridge on State Highway 163, 0.5 mi (0.8 km) south of Sterling City, 4.0 mi (6.4 km) upstream from Sterling Creek, 5.1 mi (8.2 km) downstream from Lacy Creek, and at mile 55.3 (89.0 km).

DRAINAGE AREA.--605 mi² (1,567 km²), of which 66 mi² (171 km²) probably is noncontributing.

PERIOD OF RECORD.--September 1939 to current year.

REVISED RECORDS.--WSP 1512: 1945, 1948. WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,242.36 ft (683.471 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 6, 1939, nonrecording gage at same site and datum.

REMARKS.--Records good. Small diversions above station for irrigation. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--41 years, 8.66 ft³/s (0.245 m³/s), 6,270 acre-ft/yr (7.73 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,300 ft³/s (462 m³/s) July 6, 1948, gage height, 23.70 ft (7.224 m); no flow at times each year.
Maximum stage since at least 1891, that of July 6, 1948.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft³/s (8.50 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Sept. 9	1430	1,910	54.1	14.61	4.453	Sept. 24	2230	340	9.63	7.51	2.289
Sept. 10	0630	*7,420	210	20.01	6.099	Sept. 29	1400	973	27.6	11.39	3.472

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	554
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3390
11	.00	.00	.00	.00	.00	.00	.00	.00	1.2	.00	.00	980
12	.00	.00	.00	.00	.00	.00	.00	.00	.17	.00	.00	110
13	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	25
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	7.7
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.0
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.7
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.0
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.3
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.0
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.68
21	.00	.00	.00	.00	.00	.00	.00	5.1	3.5	.00	.00	.63
22	.00	.00	.00	.00	.00	.00	.00	44	1.3	.00	.00	.47
23	.00	.00	.00	.00	.00	.00	.00	7.8	.00	.00	.00	7.4
24	.00	.00	.00	.00	.00	.00	.00	2.0	.00	.00	.00	76
25	.00	.00	.00	.00	.00	.00	.00	.75	.00	.00	.00	60
26	.00	.00	.00	.00	.00	.00	.00	.21	.00	.00	.00	28
27	.00	.00	.00	.00	.00	.00	.00	.13	.00	.00	.00	79
28	.00	.00	.00	.00	.00	.00	.00	.10	.00	.00	.00	29
29	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	629
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	81
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	60.15	6.20	.00	.00	6068.88
MEAN	.000	.000	.000	.000	.000	.000	.000	1.94	.21	.000	.000	202
MAX	.00	.00	.00	.00	.00	.00	.00	44	3.5	.00	.00	3390
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	119	12	.00	.00	12040

CAL YR 1979 TOTAL 47.35 MEAN .13 MAX 5.8 MIN .00 AC-FT 94
WTR YR 1980 TOTAL 6135.23 MEAN 16.8 MAX 3390 MIN .00 AC-FT 12170

08134000 NORTH CONCHO RIVER NEAR CARLSBAD, TX

LOCATION.--Lat 31°35'33", long 100°38'12", Tom Green County, Hydrologic Unit 12090104, near left bank on downstream side of bridge on county road, 0.6 mi (1.0 km) southeast of Carlsbad, 1.5 mi (2.4 km) upstream from Mule Creek, 2.5 mi (4.0 km) upstream from Grape Creek, 16.2 mi (26.1 km) upstream from O. C. Fisher Dam, and 22.9 mi (36.8 km) upstream from mouth.

DRAINAGE AREA.--1,249 mi² (3,235 km²), of which 105 mi² (272 km²) probably is noncontributing.

PERIOD OF RECORD.--March 1924 to current year.

REVISED RECORDS.--WSP 1512: 1924(M), 1925, 1926(M), 1928, 1930, 1932(M), 1935, 1937-38(M), 1941(M), 1945(M), 1947-49(M). WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,968.02 ft (599.852 m) National Geodetic Vertical Datum of 1929. Prior to Feb. 4, 1925, and Sept. 27, 1936, to Feb. 7, 1937, nonrecording gage; Feb. 4, 1925, to Sept. 26, 1936, and Feb. 8, 1937, to Nov. 6, 1955, water-stage recorder, all at site 2.5 mi (4.0 km) upstream at datum 32.76 ft (9.985 m) higher.

REMARKS.--Records good. Diversions by pumping above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--56 years, 35.4 ft³/s (1.003 m³/s), 25,650 acre-ft/yr (31.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 94,600 ft³/s (2,680 m³/s) Sept. 26, 1936, gage height, 16.0 ft (4.88 m) at former site, 29.1 ft (8.87 m) at present site, from floodmarks, by slope-area measurement of peak flow at former site; no flow at times.
Maximum stage since 1853, that of Sept. 26, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Stage unknown for major flood in June 1853.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42.5 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Aug. 17	0300	*10,900	309	17.68	5.389
Sept. 9	1730	6,800	195	14.57	4.441
Sept. 10	2100	8,360	237	15.81	4.819

Maximum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.87	2.4	2.6	2.4	1.0	.30	.00	.00	.00
2	.00	.00	.00	.87	2.4	2.4	2.9	.87	.24	.00	.00	.00
3	.00	.00	.00	.87	2.4	2.6	2.6	1.3	.14	.00	.00	.00
4	.00	.00	.00	.87	2.4	2.9	2.4	4.8	.10	.00	.00	.00
5	.00	.00	.00	.87	2.4	2.9	2.4	3.8	.08	.00	.00	.00
6	.00	.00	.00	.87	2.4	2.9	2.4	2.9	.06	.00	.00	.00
7	.00	.00	.00	.87	2.6	3.2	1.9	3.5	.06	.00	.00	.00
8	.00	.00	.00	.87	3.2	3.2	1.5	5.1	.04	.00	.00	.00
9	.00	.00	.00	1.0	2.9	2.9	1.2	3.5	.08	.00	.00	2040
10	.00	.00	.00	1.2	2.6	2.9	1.3	1.9	.08	.00	.00	4710
11	.00	.00	.00	1.3	2.9	2.9	1.3	1.5	.14	.00	.00	2180
12	.00	.00	.00	1.5	2.6	3.2	1.5	1.3	.08	.00	.00	397
13	.00	.00	.00	1.7	2.6	3.2	1.9	1.2	.04	.00	.00	94
14	.00	.00	.00	1.9	2.4	2.4	2.4	1.2	.01	.00	.00	51
15	.00	.00	.00	2.1	2.6	2.4	2.4	2.8	.00	.00	.00	32
16	.00	.00	.00	2.1	2.4	2.1	2.1	3.5	.00	.00	.00	24
17	.00	.00	.00	2.1	2.4	1.9	1.7	1.9	.00	.00	2250	17
18	.00	.00	.00	2.1	2.9	1.7	1.5	1.5	.00	.00	15	13
19	.00	.00	.00	2.1	3.2	1.7	1.5	1.7	.00	.00	.82	6.8
20	.00	.00	.00	2.4	3.2	1.7	1.7	1.5	.00	.00	.00	6.4
21	.00	.00	.00	2.1	2.9	2.1	1.5	2.4	.00	.00	.00	4.5
22	.00	.00	.00	3.5	2.6	2.1	1.5	2.1	7.0	.00	.00	39
23	.00	.00	.00	2.9	2.6	2.1	1.5	1.4	2.5	.00	.00	22
24	.00	.00	.00	2.6	2.6	2.4	1.5	1.3	.93	.00	.00	7.2
25	.00	.00	.44	3.2	2.6	2.3	1.6	1.0	.24	.00	.00	236
26	.00	.00	.83	2.6	2.4	2.4	1.2	.87	.04	.00	.00	4.5
27	.00	.00	.87	2.4	2.6	2.4	1.0	.64	.02	.00	.00	132
28	.00	.00	2.6	2.4	2.4	2.6	1.0	.54	.01	.00	.00	83
29	.00	.00	2.1	2.6	2.4	2.6	1.2	.64	.00	.00	.00	119
30	.00	.00	1.3	2.4	---	2.4	1.2	.54	.00	.00	.00	302
31	.00	---	1.0	2.4	---	2.4	---	.45	---	.00	.00	---
TOTAL	.00	.00	9.14	57.56	76.0	77.5	52.2	58.65	12.19	.00	2265.82	10520.40
MEAN	.000	.000	.29	1.86	2.62	2.50	1.74	1.89	.41	.000	73.1	351
MAX	.00	.00	2.6	3.5	3.2	3.2	2.9	5.1	7.0	.00	2250	4710
MIN	.00	.00	.00	.87	2.4	1.7	1.0	.45	.00	.00	.00	.00
AC-FT	.00	.00	18	114	151	154	104	116	24	.00	4490	20870

CAL YR 1979 TOTAL 780.24 MEAN 2.14 MAX 65 MIN .00 AC-FT 1550
WTR YR 1980 TOTAL 13129.46 MEAN 35.9 MAX 4710 MIN .00 AC-FT 26040

08134500 O. C. FISHER LAKE AT SAN ANGELO, TX

LOCATION.--Lat 31°29'04", long 100°28'53", Tom Green County, Hydrologic Unit 12090104, in intake structure of O. C. Fisher Dam on North Concho River, 3.1 mi (5.0 km) northwest of San Angelo, and 6.6 mi (10.6 km) upstream from mouth.

DRAINAGE AREA.--1,488 mi^2 (3,854 km^2), of which 105 mi^2 (272 km^2) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1952 to current year. Published as San Angelo Reservoir prior to October 1970, and as San Angelo Lake, October 1970 to September 1974.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to May 12, 1953, nonrecording gage at same site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam 40,885 ft (12,462 m) long, including spillway. Closure was completed Mar. 7, 1951, and the dam was completed May 3, 1951. Deliberate impoundment began Feb. 1, 1952. The lake is operated for flood control and recreation with part as municipal supply for the city of San Angelo. The spillway is an uncontrolled off-channel concrete gravity dam with ogee weir section 1,150 ft (351 m) wide located to the right and upstream from the right end of dam. The spillway is designed to discharge 356,000 ft^3/s (10,100 m^3/s) at maximum design flood level. The service control outlet works consist of six gate-controlled outlets, 7.5 by 14.5 ft (2.3 by 4.4 m), opening into two 18.0-foot-diameter (5.5 m) concrete conduits, and two 2.5-foot (0.8 m) gate-controlled outlets for water-supply outlets. Since February 1973, the capacity is based on a survey made in 1962. Prior to 1973, the capacity was based on a survey made in 1944. Corps of Engineers gage-height telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam..	1,964.0	-
Design flood..	1,958.0	690,000
Crest of spillway...	1,938.5	392,700
Top of conservation pool..	1,908.0	115,700
Lowest gated outlet (invert)....................................	1,840.0	0

COOPERATION.--Records furnished by the Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 174,100 acre-ft (215 hm^3) Oct. 14, 1957, elevation, 1,916.47 ft (584.140 m); minimum since first appreciable storage, lake dry July 16, 1970, to Apr. 15, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 35,000 acre-ft (43.2 hm^3) Sept. 30 at 2400 hours, elevation, 1,885.46 ft (574.688 m); minimum, 12,720 acre-ft (15.7 hm^3) Aug. 16 at 1800 hours, elevation, 1,872.45 ft (570.723 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

1,872.0	12,230	1,880.0	23,560
1,874.0	14,560	1,882.0	27,480
1,876.0	17,160	1,884.0	31,710
1,878.0	20,080	1,886.0	36,260

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18680	17680	17090	17110	16900	16740	16350	15660	15560	14870	13570	16400
2	18650	17650	17090	17100	16900	16710	16350	15640	15540	14840	13520	16350
3	18580	17630	17060	17100	16880	16680	16310	15700	15500	14790	13460	16310
4	18550	17600	17060	17070	16880	16670	16290	15700	15460	14740	13410	16270
5	18490	17600	17050	17070	16880	16670	16260	15700	15420	14700	13380	16250
6	18460	17550	17020	17070	16860	16670	16260	15670	15400	14640	13330	16210
7	18420	17540	17010	17050	16860	16670	16210	15660	15370	14590	13280	16170
8	18400	17520	16990	17030	16950	16660	16190	15660	15490	14560	13250	16150
9	18330	17500	16990	17030	16950	16660	16150	15630	15500	14520	13210	19160
10	18300	17470	16990	17030	16940	16640	16130	15600	15480	14460	13180	26070
11	18300	17440	16990	17020	16930	16660	16100	15600	15460	14430	13200	31160
12	18240	17230	17010	17020	16930	16640	16090	15590	15490	14400	13190	31860
13	18200	17400	17020	16990	16930	16600	16110	15600	15460	14350	13170	31950
14	18170	17380	17030	16990	16930	16580	16090	15600	15420	14300	13130	31970
15	18200	17370	17020	16980	16930	16580	16060	15880	15380	14260	13110	31970
16	18170	17360	17010	16980	16910	16590	16040	15850	15350	14200	13110	31910
17	18160	17360	16980	16980	16910	16560	16040	15820	15310	14180	17050	31860
18	18130	17340	16980	16970	16910	16520	16040	15840	15280	14120	17070	31780
19	18100	17340	16970	16980	16880	16520	16020	15820	15240	14070	17050	31730
20	18070	17370	16970	16980	16900	16480	15970	15820	15220	14030	16990	31660
21	18030	17330	16970	16980	16860	16460	15900	15810	15180	14000	16950	31600
22	17970	17300	16970	17020	16840	16430	15890	15790	15210	13950	16900	31560
23	17940	17290	17070	17010	16840	16420	15880	15760	15170	13910	16860	31640
24	17910	17260	17030	16990	16830	16380	15860	15730	15140	13880	16800	31750
25	17900	17240	17030	16980	16800	16360	15820	15710	15100	13840	16750	32260
26	17870	17240	17020	16970	16790	16350	15760	15680	15050	13820	16700	32570
27	17870	17180	17010	16950	16790	16430	15730	15700	15030	13760	16660	33040
28	17820	17150	17130	16950	16780	16420	15720	15670	14980	13730	16600	33960
29	17800	17130	17130	16940	16760	16420	15680	15660	14920	13680	16560	34030
30	17770	17110	17110	16940	---	16390	15670	15630	14880	13650	16520	35000
31	17720	---	17110	16910	---	16380	---	15600	---	13610	16440	---
MAX	18680	17680	17130	17110	16950	16740	16350	15880	15560	14870	17070	35000
MIN	17720	17110	16970	16910	16760	16350	15670	15590	14880	13610	13110	16150
(†)	1876.41	1875.97	1875.97	1875.82	1875.71	1875.42	1874.88	1874.83	1874.26	1873.22	1875.47	1885.46
(‡)	-970	-610	0	-200	-150	-380	-710	-70	-720	-1270	+2830	+18560

CAL YR 1979 MAX 23790 MIN 16970 ‡ -6420
WTR YR 1980 MAX 35000 MIN 13110 ‡ +17890

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
JAN 02...	1110	802	9.5	250	100	50	31	58	1.6

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
JAN 02...	20	180	0	57	130	.4	6.0	441

08135000 NORTH CONCHO RIVER AT SAN ANGELO, TX

LOCATION.--Lat 31°27'57", long 100°26'51", Tom Green County, Hydrologic Unit 12090104, near left bank on downstream side of pier of Sixth Street Bridge in San Angelo, 3.2 mi (5.1 km) upstream from confluence with South Concho River, and 3.4 mi (5.5 km) downstream from O. C. Fisher Dam.

DRAINAGE AREA.--1,507 mi^2 (3,903 km^2) of which 105 mi^2 (272 km^2) probably is noncontributing.

PERIOD OF RECORD.--October 1915 to June 1928, February 1929 to September 1931, July 1947 to current year.

REVISED RECORDS.--WSP 568: 1916, 1918-22. WSP 1512: 1916(M), 1917-18, 1919-21(M). WSP 1922: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,813.42 ft (552.730 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 1, 1920, nonrecording gage, and Sept. 1, 1920, to Feb. 11, 1929, water-stage recorder at site 1.6 mi (2.6 km) downstream at datum 11.02 ft (3.359 m) lower. Feb. 12, 1929, to Sept. 30, 1931, water-stage recorder at site 1.6 mi (2.6 km) downstream at datum 13.02 ft (3.968 m) lower.

REMARKS.--Records fair. Since October 1951, flow regulated by O. C. Fisher Lake (station 08134500). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--17 years (water years 1917-27, 1930-31, 1948-51) prior to completion of O. C. Fisher Dam, 54.5 ft^3/s (1.543 m^3/s), 39,490 acre-ft/yr (48.7 hm^3/yr); 29 years (water years 1952-80) regulated, 8.44 ft^3/s (0.239 m^3/s), 6,110 acre-ft/yr (7.53 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 47,000 ft^3/s (1,330 m^3/s) June 13, 1930, gage height, 22.52 ft (6.864 m), site and datum then in use; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 17, 1936, reached a stage of 34.6 ft (10.55 m), from floodmarks, discharge 184,000 ft^3/s (5,210 m^3/s), by slope-area measurement. The flood in 1936 was the greatest since flood in June 1853 (stage unknown).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 639 ft^3/s (18.1 m^3/s) Sept. 9, gage height, 2.99 ft (0.911 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.00	.08	.31	.80	.46	.24	.21	2.2	.11	.00	.00
2	.00	.01	.12	.54	.81	.44	.23	.17	2.4	.16	.00	.00
3	.00	.01	.17	.57	.81	.52	.20	1.9	2.4	.00	.00	.00
4	.00	.01	.26	.59	.81	.58	.17	2.7	3.5	.00	.00	.00
5	.01	.01	.27	.58	.81	.58	.26	1.1	4.0	.00	.00	.00
6	.01	.01	.21	.61	.88	.54	.33	.57	3.4	.00	.00	.00
7	.01	.01	.21	.61	1.1	.56	.32	.42	.77	.00	.00	.00
8	.01	.01	.28	.65	2.8	.50	.37	2.2	31	.00	.00	.00
9	.00	.01	.29	.56	1.5	.48	.34	1.1	15	.00	.00	167
10	.01	.08	.26	.59	.98	.21	.28	.71	1.9	.00	.00	45
11	.02	.04	.30	.61	.69	.03	.21	.50	12	.00	.00	7.8
12	.01	.03	.94	.58	.63	.03	.23	.43	2.0	.00	.00	1.6
13	.01	.03	.81	.53	.63	.03	3.8	3.6	4.8	.00	.00	.88
14	.01	.03	2.1	.57	.65	.03	1.1	1.4	3.3	.00	.00	1.1
15	.40	.02	.79	.64	.63	.02	.62	91	.79	.00	.00	.75
16	.00	.03	.54	.64	.58	.02	.56	5.8	.47	.00	.00	.65
17	.03	.03	.48	.62	.70	.02	.35	2.0	.00	.00	.00	.58
18	.03	.04	.47	.61	.75	.02	.43	1.6	.00	.00	3.4	.70
19	.02	.04	.50	.57	.65	.01	.38	2.5	.00	.00	2.7	.70
20	.01	.03	.46	.60	.63	.01	.31	2.3	.00	.00	1.5	.56
21	.01	.01	.44	.64	.56	.01	.34	6.9	.00	.00	1.1	.52
22	.00	.01	.42	4.3	.63	.01	.32	1.7	.18	.00	.91	.52
23	.00	.01	8.8	.99	.68	.01	.34	1.5	.00	.00	.65	2.1
24	.00	.01	1.3	.67	.54	.01	.35	1.4	.00	.00	.61	12
25	.00	.02	.63	.62	.56	.01	.26	1.3	.00	.00	.48	16
26	.00	.02	.46	.60	.54	.01	.26	1.2	.00	.00	.16	26
27	.01	.02	.44	.58	.46	1.3	.28	1.2	.00	.00	.05	82
28	.00	.01	16	.72	.44	.52	.27	1.8	.00	.00	.01	37
29	.01	.02	4.9	.78	.44	1.4	.26	2.8	.00	.00	.00	6.3
30	.00	.03	.58	.81	---	.44	.23	2.4	.00	.00	.00	1.6
31	.00	---	.34	.79	---	.27	---	2.2	---	.00	.00	---
TOTAL	.63	.64	43.85	23.08	22.69	9.08	13.64	146.61	90.11	.27	11.57	411.36
MEAN	.020	.021	1.41	.74	.78	.29	.45	4.73	3.00	.009	.37	13.7
MAX	.40	.08	16	4.3	2.8	1.4	3.8	91	31	.16	3.4	167
MIN	.00	.00	.08	.31	.44	.01	.17	.17	.00	.00	.00	.00
AC-FT	1.2	1.3	87	46	45	18	27	291	179	.5	23	816

CAL YR 1979 TOTAL 348.41 MEAN .95 MAX 30 MIN .00 AC-FT 691
WTR YR 1980 TOTAL 773.53 MEAN 2.11 MAX 167 MIN .00 AC-FT 1530

08136000 CONCHO RIVER AT SAN ANGELO, TX

LOCATION.--Lat 31°27'16", long 100°24'37", Tom Green County, Hydrologic Unit 12090105, on left bank 0.4 mi (0.6 km) downstream from confluence of North and South Concho Rivers, 1.8 mi (2.9 km) southeast of Tom Green County Courthouse, and

DRAINAGE AREA.--5,380 mi^2 (13,934 km^2), of which 1,283 mi

PERIOD OF RECORD.--September 1915 to current year. Prior to October 1969, published as "near San Angelo".

REVISED RECORDS.--WSP 568: 1915-16, 1919-22. WSP 1148: 1916-22(M), 1924(M), 1925-26, 1929(M), 1930-32, 1935-37. WSP 1512: 1917-18. WSP 1712: 1936. WSP 1922: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,776.79 ft (541.566 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 11, 1917, nonrecording gage at same site and datum. Aug. 11, 1917, to May 15, 1963, water-stage recorder on right bank at same datum.

REMARKS.--Records good except those for periods of no gage-height record, Dec. 3 to Jan. 3 and May 17, to June 15, which are poor. Many diversions upstream from station for irrigation, industrial, and municipal supply. Records furnished by the city of San Angelo show that they diverted 18,900 acre-ft (23.3 hm^3); no water was diverted from E. V. Spence Reservoir during the year. All sewage effluent is used for irrigation about 6 mi (10 km) downstream from gage, and none is returned directly to the river. Flow is regulated by Twin Buttes Reservoir (station 08131200) on the South Concho River and by O. C. Fisher Lake (station 08134500) on the North Concho River. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--47 years (water years 1916-62) prior to construction of Twin Buttes Dam, 158 ft^3/s (4.475 m^3/s), 114,500 acre-ft/yr (141 hm^3/yr); 18 years (water years 1963-80) regulated, 23.3 ft^3/s (0.660 m^3/s), 16,880 acre-ft/yr (20.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 230,000 ft^3/s (6,510 m^3/s) Sept. 17, 1936, gage height, 46.6 ft (14.20 m), from floodmarks, from rating curve extended above 105,000 ft^3/s (2,970 m^3/s) on basis of slope-area measurements of 167,000 and 230,000 ft^3/s (4,730 and 6,510 m^3/s); no flow at times in 1921, 1952-53, 1965, and 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1853, 47.5 ft (14.48 m) Aug. 6, 1906, discharge, about 246,000 ft^3/s (6,970 m^3/s), from information by local resident. Other large floods are known to have occurred in June 1853, August 1882, and April 1900.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,500 ft^3/s (326 m^3/s) Sept. 9 at 2400 hours, gage height, 14.37 ft (4.380 m), from floodmark; minimum, 1.2 ft^3/s (0.034 m^3/s) Oct. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	10	13	12	14	12	18	13	20	7.5	25	6.1
2	11	9.9	10	12	15	14	16	18	20	34	28	5.1
3	11	13	8.0	13	17	17	12	32	20	29	30	3.6
4	15	14	6.0	14	14	13	13	50	25	19	33	3.0
5	20	8.3	5.0	15	13	12	16	42	30	15	32	3.1
6	21	6.1	5.0	16	12	12	13	36	25	15	27	3.2
7	16	7.1	5.0	16	13	14	10	27	20	14	20	4.2
8	23	8.9	5.0	16	30	10	9.0	27	150	13	19	1020
9	18	8.4	5.0	17	31	8.8	8.9	35	70	10	26	2670
10	24	7.8	5.0	15	29	9.0	9.7	31	40	7.9	36	850
11	27	11	8.0	14	22	9.3	17	21	50	8.9	51	55
12	18	10	10	14	20	13	46	23	40	11	56	30
13	28	11	15	15	20	13	39	44	35	19	46	19
14	28	9.3	20	13	19	13	30	52	20	22	37	16
15	30	9.0	15	12	18	13	25	408	15	18	21	14
16	32	9.5	15	14	17	11	20	150	9.0	16	11	10
17	21	11	15	15	18	9.4	19	50	6.9	15	17	7.8
18	13	13	15	14	21	11	19	30	5.8	13	89	6.6
19	9.0	16	15	13	20	10	12	20	4.6	14	29	5.1
20	7.6	16	15	13	15	8.7	17	30	4.8	17	16	4.1
21	5.0	19	15	14	13	6.0	16	40	4.8	19	11	4.1
22	4.3	19	15	35	21	6.6	14	30	31	18	6.9	4.8
23	3.4	19	30	26	17	7.4	13	25	26	18	5.0	34
24	3.0	17	25	18	15	8.6	12	20	13	18	3.8	54
25	3.5	16	20	16	18	7.3	13	15	6.8	24	3.8	82
26	3.8	13	15	12	15	10	16	15	4.4	29	3.9	71
27	3.7	12	15	11	13	33	14	15	3.6	31	4.3	282
28	3.2	10	100	11	12	32	11	15	3.1	32	4.7	159
29	2.8	12	40	12	11	29	8.7	20	3.0	30	4.7	37
30	6.7	13	20	12	---	24	9.4	20	3.1	26	4.1	22
31	8.7	---	15	13	---	22	---	20	---	26	4.5	---
TOTAL	432.7	359.3	520.0	463	513	419.1	496.7	1374	709.9	589.3	705.7	5485.8
MEAN	14.0	12.0	16.8	14.9	17.7	13.5	16.6	44.3	23.7	19.0	22.8	183
MAX	32	19	100	35	31	33	46	408	150	34	89	2670
MIN	2.8	6.1	5.0	11	11	6.0	8.7	13	3.0	7.5	3.8	3.0
AC-FT	858	713	1030	918	1020	831	985	2730	1410	1170	1400	10880

CAL YR 1979 TOTAL 5503.30 MEAN 15.1 MAX 155 MIN .11 AC-FT 10920
WTR YR 1980 TOTAL 12068.50 MEAN 33.0 MAX 2670 MIN 2.8 AC-FT 23940

NOTE.--No gage-height record Dec. 3 to Jan. 3, Apr. 22-23, May 17 to June 15.

08136150 CONCHO RIVER NEAR VERIBEST, TX
(Low-flow partial-record station)

LOCATION.--Lat 31°32'07", long 100°13'05", Tom Green County, Hydrologic Unit 12090105, at bridge on county road, 2.8 mi (4.5 km) downstream from Crownest Creek, 4.5 mi (7.2 km) northeast of Veribest, and 17.3 mi (27.8 km) downstream from gaging station near San Angelo.

PERIOD OF RECORD.--Periodic discharge measurements: April 1970 to April 1974. Periodic water-quality data: February 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)
NOV 08...	1445	20	2280	7.8	16.0	11.9	129	2.1	660	380
JAN 24...	1440	35	2040	7.6	9.5	15.9	149	1.1	520	260
MAR 19...	1600	12	2100	8.0	16.0	16.4	178	4.0	590	340
MAY 22...	1510	50	1300	8.0	24.5	12.2	152	4.5	340	180
JUL 15...	0900	16	2210	8.0	29.5	8.0	111	4.4	500	320
SEPT 17...	1800	28	1560	8.3	28.0	17.5	236	14	390	250

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
NOV 08...	140	76	230	3.9	4.8	340	0	240	440	.7
JAN 24...	120	53	210	4.0	5.4	310	0	180	380	.7
MAR 19...	130	65	240	4.3	5.8	310	0	220	430	.5
MAY 22...	78	36	140	3.3	6.1	200	0	110	260	.5
JUL 15...	100	61	220	4.3	6.9	220	0	210	420	.4
SEP 17...	81	46	150	3.3	5.2	170	0	140	320	.4

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)
NOV 08...	25	1320	7.6	.12	7.7	.03	.63	.66	.020
JAN 24...	22	1120	5.0	.08	5.1	.06	1.0	1.1	.060
MAR 19...	15	1260	3.8	.04	3.8	.12	1.3	1.4	.060
MAY 22...	16	745	1.7	.05	1.7	.15	1.5	1.6	.270
JUL 15...	17	1140	1.0	.10	1.1	.18	1.4	1.6	.120
SEP 17...	17	843	2.1	.03	2.1	.00	1.7	1.7	.060

08136500 CONCHO RIVER AT PAINT ROCK, TX

LOCATION.--Lat 31°30'57", long 99°55'09", Concho County, Hydrologic Unit 12090105, near left bank on downstream end of pier of bridge on U.S. Highway 83, 0.5 mi (0.8 km) north of Concho County Courthouse in Paint Rock, 2.7 mi (4.3 km) downstream from Kickapoo Creek, and 19.6 mi (31.5 km) upstream from mouth.

DRAINAGE AREA.--6,415 mi^2 (16,615 km^2), of which 1,283 mi^2 (3,323 km^2) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1915 to current year. Prior to October 1970, published as "near Paint Rock".

REVISED RECORDS.--WSP 458: 1915-16. WSP 568: 1919-20. WSP 1712: 1922(M). WSP 1732: 1918(M), 1923(M). WSP 1922: Drainage area.

GAGE.--Water-stage recorder with masonry dam control. Datum of gage is 1,574.36 ft (479.865 m) National Geodetic Vertical Datum of 1929. See WSP 1922 for history of changes prior to Jan. 15, 1940.

REMARKS.--Water-discharge records good. Many diversions above station for irrigation and municipal supply. Regulation same as that for Concho River at San Angelo (station 08136000). Flow is affected at times by discharge from flood-detention pools of two floodwater-retarding structures with combined detention capacity of 2,690 acre-ft (3.32 hm^3). These structures control runoff from 16.5 mi^2 (42.7 km^2) in the Willow Creek drainage basin.

AVERAGE DISCHARGE.--47 years (water years 1916-62) prior to construction of Twin Buttes Dam, 210 ft^3/s (5.947 m^3/s), 152,100 acre-ft/yr (188 hm^3/yr); 18 years (water years 1963-80) regulated, 59.7 ft^3/s (1.691 m^3/s), 43,250 acre-ft/yr (53.3 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 301,000 ft^3/s (8,520 m^3/s) Sept. 17, 1936, gage height, 43.4 ft (13.23 m), from floodmarks, from rating curve extended above 98,000 ft^3/s (2,780 m^3/s) on basis of slope-area measurements of 144,000 and 301,000 ft^3/s (4,080 and 8,520 m^3/s); no flow at times.

Maximum stage since at least 1853, that of Sept. 17, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1882 reached a stage of about 39.9 ft (12.16 m), and flood in August 1906 reached a stage of 39.5 ft (12.04 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 46,600 ft^3/s (1,320 m^3/s) Sept. 9 at 0830 hours, gage height, 28.25 ft (8.611 m); minimum daily, 0.03 ft^3/s (0.001 m^3/s) Sept. 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	14	24	42	31	23	14	.98	32	9.6	14	.05
2	17	14	24	39	32	20	14	1.1	29	8.4	14	.05
3	17	11	29	35	33	22	9.8	1.6	26	6.2	13	.05
4	18	15	33	33	33	24	6.4	3.2	25	4.0	13	.03
5	16	19	33	33	34	19	3.7	1.9	23	2.2	12	.03
6	16	19	32	33	33	24	2.0	12	20	1.2	20	.10
7	29	22	29	33	32	19	2.0	42	17	14	41	.20
8	27	20	29	33	36	20	1.1	226	39	16	43	6430
9	27	17	28	33	33	21	1.1	76	63	12	31	23800
10	22	16	28	34	37	20	1.0	41	172	8.4	27	8650
11	22	19	28	33	46	18	.99	42	139	7.2	20	866
12	22	24	33	32	44	18	.70	70	86	5.0	41	239
13	27	24	40	32	39	15	1.6	53	98	4.0	38	114
14	27	23	44	31	38	12	1.1	38	60	4.0	31	70
15	36	26	44	31	37	11	1.5	59	43	4.0	25	52
16	37	28	47	31	35	9.9	2.6	466	35	2.2	24	44
17	38	27	42	31	33	5.9	3.2	249	29	1.2	22	37
18	31	28	40	31	33	4.6	3.0	106	27	.76	20	32
19	25	30	38	32	33	4.8	5.2	70	22	.76	17	30
20	22	31	38	33	34	8.0	6.0	59	16	.76	46	27
21	19	29	36	33	33	5.2	5.7	302	679	.39	31	25
22	15	27	35	45	31	5.1	5.1	120	294	.20	22	23
23	14	26	49	39	28	3.2	4.4	89	63	.20	16	22
24	12	30	45	48	28	3.0	3.5	60	50	.39	9.6	22
25	11	26	76	48	31	.63	1.7	48	55	.39	7.2	32
26	11	27	57	40	28	.88	.56	103	36	.20	5.0	133
27	12	27	44	36	27	1.7	1.1	75	25	.10	2.2	497
28	13	25	48	35	27	6.8	1.2	52	18	.39	1.2	3680
29	13	22	52	32	27	3.3	.99	48	14	11	.76	1090
30	13	22	94	31	---	4.5	.91	36	12	8.4	.76	470
31	13	---	57	31	---	3.3	---	33	---	7.2	.10	---
TOTAL	639	688	1276	1083	966	356.81	106.15	2583.78	2247	140.74	607.82	46385.51
MEAN	20.6	22.9	41.2	34.9	33.3	11.5	3.54	83.3	74.9	4.54	19.6	1546
MAX	38	31	94	48	46	24	14	466	679	16	46	23800
MIN	11	11	24	31	27	.63	.56	.98	12	.10	.10	.03
AC-FT	1270	1360	2530	2150	1920	708	211	5120	4460	279	1210	92010

CAL YR 1979 TOTAL 12368.40 MEAN 33.9 MAX 1040 MIN 5.0 AC-FT 24530
WTR YR 1980 TOTAL 57079.81 MEAN 156 MAX 23800 MIN .03 AC-FT 113200

08136500 CONCHO RIVER AT PAINT ROCK, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1967 to current year. Pesticide analyses: October 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to current year.
WATER TEMPERATURES: October 1967 to current year.
SUSPENDED SEDIMENT DISCHARGE: February 1978 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equation developed for this station may be obtained from the Geological ^urvey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum da'ly, 3,110 micromhos Apr. 20, 24, 25, 1974; minimum daily, 268 micromhos Sept. 9, 1980.
WATER TEMPERATURES (1967-73, 1975-80): Maximum daily, 35.0°C on several days during summer months; minimum daily 0.0°C on many days during winter months.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 4,190 mg/L Sept. 9, 1980; minimum daily mean, 3 mg/L Feb. 2, 1979.
SEDIMENT LOADS: Maximum daily, 269,000 tons Sept. 9, 1980; minimum daily, 0.0 tons on several days during September 1980.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,580 micromhos May 5; minimum daily, 268 micromhos Sept. 9.
WATER TEMPERATURES: Maximum daily, 35.0°C July 15, Oct. 6; minimum daily, 5.0°C Dec. 16.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 4190 mg/L Sept. 9; minimum daily mean, 7 mg/L Dec. 18.
SEDIMENT LOADS: Maximum daily, 269.000 tons Sept. 9; minimum daily, 0.0 tons on several days during September.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
OCT										
15...	1015	36	2000	7.9	21.0	--	--	--	--	--
NOV										
08...	1300	38	2390	7.7	15.0	5	14	12.3	131	1.9
JAN										
24...	1240	75	2180	7.7	9.0	0	8.4	14.6	134	.9
31...	1020	31	2140	--	6.0	--	--	--	--	--
FEB										
29...	1630	27	2110	--	18.0	--	--	--	--	--
MAR										
19...	1400	14	2400	8.0	14.0	10	26	13.4	138	2.8
31...	1730	4.0	2230	--	20.0	--	--	--	--	--
APR										
30...	0945	1.2	2550	--	21.0	--	--	--	--	--
MAY										
22...	1430	110	1270	7.8	24.5	60	42	12.5	156	1.4
JUN										
22...	0800	2310	--	--	22.0	--	--	--	--	--
30...	1200	12	664	--	32.0	--	--	--	--	--
JUL										
08...	0940	16	900	--	29.0	--	--	--	--	--
15...	1030	5.0	1110	7.8	28.5	30	28	6.8	91	10
SEP										
08...	0745	13400	--	--	26.0	--	--	--	--	--
08...	1335	4710	--	--	22.5	--	--	--	--	--
08...	1345	6030	232	--	22.5	--	--	--	--	--
09...	0800	46400	--	--	22.0	--	--	--	--	--
09...	1810	22700	--	--	22.0	--	--	--	--	--
17...	1600	55	1050	8.6	29.0	20	23	15.2	208	8.5

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)
OCT									
15...	610	420	120	76	180	3.2	5.7	240	0
NOV									
08...	690	480	140	82	190	3.2	5.3	250	0
JAN									
24...	600	380	130	68	200	3.5	5.2	280	0
31...	650	450	140	73	200	3.4	5.6	250	0
FEB									
29...	640	450	140	71	190	3.3	5.2	240	0
MAR									
19...	690	490	150	77	220	3.6	5.7	250	0
31...	680	500	150	74	210	3.5	5.9	220	0
APR									
30...	770	620	160	91	240	3.8	6.0	190	0
MAY									
22...	350	210	81	37	120	2.8	5.9	180	0
JUN									
22...	--	--	--	--	--	--	--	--	--
30...	200	100	51	18	50	1.5	5.7	120	0
JUL									
08...	270	150	65	26	73	1.9	7.1	150	0
15...	320	170	73	33	94	2.3	7.5	180	0
SEP									
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
08...	89	13	30	3.3	9.1	.4	4.2	92	0
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
17...	260	170	63	26	71	1.9	6.0	100	8

08136500 CONCHO RIVER AT PAINT ROCK, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)
OCT									
15...	240	400	.6	23	1160	--	--	--	--
NOV									
08...	260	410	.6	21	1230	35	14	7.5	.120
JAN									
24...	260	430	.6	19	1250	18	8	8.7	.100
31...	240	430	.6	18	1230	--	--	--	--
FEB									
29...	250	420	.6	15	1210	--	--	--	--
MAR									
19...	260	480	.6	14	1330	33	7	6.5	.060
31...	280	470	.7	14	1310	--	--	--	--
APR									
30...	310	580	.6	15	1500	--	--	--	--
MAY									
22...	120	230	.4	15	698	11	7	1.1	.040
JUN									
22...	--	--	--	--	--	--	--	--	--
30...	62	120	.3	16	382	--	--	--	--
JUL									
08...	86	170	.5	20	522	--	--	--	--
15...	96	220	1.1	21	634	53	16	.16	.040
SEP									
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
08...	13	20	.2	8.0	133	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
17...	93	190	.3	13	520	28	17	1.1	.030

DATE	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT									
15...	--	--	--	--	--	--	--	--	--
NOV									
08...	7.6	.040	.81	.85	.020	9.2	--	--	--
JAN									
24...	8.8	.040	.08	.12	.030	4.3	--	--	--
31...	--	--	--	--	--	--	--	--	--
FEB									
29...	--	--	--	--	--	--	--	--	--
MAR									
19...	6.6	.080	1.3	1.4	.040	9.5	--	--	--
31...	--	--	--	--	--	--	--	--	--
APR									
30...	--	--	--	--	--	--	--	--	--
MAY									
22...	1.1	.150	1.3	1.4	.080	7.6	--	--	--
JUN									
22...	--	--	--	--	--	--	459	2860	99
30...	--	--	--	--	--	--	--	--	--
JUL									
08...	--	--	--	--	--	--	--	--	--
15...	.20	.140	1.4	1.5	.250	13	--	--	--
SEP									
08...	--	--	--	--	--	--	4590	166000	89
08...	--	--	--	--	--	--	1860	23700	97
08...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	4230	530000	79
09...	--	--	--	--	--	--	2360	145000	94
17...	1.1	.000	1.5	1.5	.080	7.4	--	--	--

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
NOV							
08...	1300	4	300	0	0	0	10
MAR							
19...	1400	2	300	0	0	3	10
SEP							
17...	1600	5	100	1	0	1	10

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV						
08...	0	0	.2	3	0	10
MAR						
19...	0	10	.1	4	0	20
SEP						
17...	0	2	.1	1	0	6

08136500 CONCHO RIVER AT PAINT ROCK, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	PCB TOTAL (UG/L)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	CHLORDANE, TOTAL (UG/L)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG)
NOV 08...	1300	.00	0	--	.00	.0	.0	0	.00	.0
MAR 19...	1400	.00	2	.00	.00	.0	.0	0	.00	.7
SEP 17...	1600	.00	0	.00	.00	.0	.0	0	.00	.3

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)
NOV 08...	.00	.0	.00	.0	.00	.00	.0	.00	.00	.0
MAR 19...	.00	.6	.00	.7	.00	.00	.1	.00	.00	.0
SEP 17...	.00	5.1	.00	.8	.01	.00	.1	.00	.00	.0

DATE	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG)
NOV 08...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0
MAR 19...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0
SEP 17...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
NOV 08...	.00	.00	.00	.00	0	0	.00	.00	.00	.00
MAR 19...	.00	.00	.00	.00	0	0	.00	.00	.00	.00
SEP 17...	.00	.00	.00	.00	0	0	.00	.00	.00	.00

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	TEMPERATURE, WATER (DEG C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM
JUN 22...	0800	2310	22.0	459	2860	83	90
SEP 08...	0745	13400	26.0	4590	166000	40	57
08...	1335	4710	22.5	1860	23700	47	50
09...	0800	46400	22.0	4230	530000	38	47
09...	1810	22700	22.0	2360	145000	54	64

DATE	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM
JUN 22...	93	96	98	99	99	100	--
SEP 08...	70	81	87	89	94	99	100
08...	56	65	76	97	99	99	100
09...	56	65	72	79	95	98	100
09...	70	81	88	94	99	99	99

08136500 CONCHO RIVER AT PAINT ROCK, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	639	2010	1150	1980	400	698	220	388	600
NOV.	1979	688	2210	1270	2360	450	845	260	479	670
DEC.	1979	1276	2230	1290	4430	460	1590	260	901	670
JAN.	1980	1083	2060	1180	3450	420	1220	230	682	610
FEB.	1980	966	2120	1220	3180	430	1130	240	634	640
MAR.	1980	356.81	2180	1250	1210	450	431	250	244	660
APR.	1980	106.15	2320	1340	383	480	138	280	79	700
MAY	1980	2583.78	1490	840	5860	290	2000	150	1060	430
JUNE	1980	2247	1060	597	3620	200	1200	100	616	300
JULY	1980	140.74	999	558	212	180	69	91	34	280
AUG.	1980	607.82	2000	1150	1880	410	665	230	371	600
SEPT	1980	46385.51	352	194	24300	60	7560	28	3450	94
TOTAL		57079.81	**	**	52800	**	17500	**	8930	**
WTD. AVG.		156	611	343	**	110	**	58	**	170

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2020	1990	2350	2070	2160	2140	2250	2560	1320	703	1290	1900
2	2030	2000	2360	2080	2190	2160	2260	2570	1390	722	1300	1910
3	1980	2030	2360	2060	2130	2150	2270	2560	1470	742	1340	1920
4	2010	2010	2350	2030	2100	2140	2270	2570	1500	770	1500	1910
5	2030	2020	2350	1980	2170	2170	2310	2580	1530	798	1620	1920
6	2010	2040	2340	1920	2180	2180	2300	2440	1540	825	1740	1930
7	1970	2070	2350	1940	2150	2120	2280	2290	1540	851	1830	1940
8	1980	2050	2320	1980	2110	2180	2330	1810	1430	902	1820	300
9	1970	2070	2350	2010	2090	2160	2340	2050	1220	1050	1960	268
10	1980	2090	2350	2040	2100	2180	2350	2160	1490	1070	1980	340
11	1950	2100	2330	2020	2110	2160	2360	2120	1500	1090	2050	479
12	1990	2120	2340	1990	2130	2170	2340	1870	1550	1120	2210	595
13	2010	2130	2310	1970	2110	2190	2350	1680	1790	1140	2400	740
14	1970	2150	2270	1970	2120	2210	2340	1640	1770	1130	2540	835
15	2000	2160	2280	1980	2110	2220	2360	1790	1730	1120	2420	884
16	2030	2180	2250	2020	2130	2230	2380	1440	1680	1140	2320	930
17	2010	2200	2300	2050	2140	2220	2370	1550	1660	1150	2230	936
18	2060	2210	2280	2080	2120	2230	2380	1490	1620	1140	2140	976
19	2050	2230	2250	2090	2130	2240	2400	1740	1610	1170	2080	1020
20	2060	2260	2260	2110	2120	2250	2100	1790	1630	1180	2020	1160
21	2070	2280	2260	2120	2110	2260	2300	1120	750	1160	1960	1180
22	2030	2300	2250	2030	2130	2280	2440	1320	550	1170	1940	1200
23	1960	2330	2200	2060	2110	2300	2430	1280	574	1180	1920	1240
24	2040	2350	2170	2120	2120	2280	2450	1190	619	1190	1890	1290
25	1990	2360	2080	2110	2110	2290	2480	1070	625	1200	1870	1340
26	1980	2360	2200	2140	2060	2290	2500	1000	633	1220	1880	1470
27	1970	2370	2180	2150	2080	2280	2510	1080	606	1210	1870	1680
28	1990	2380	2130	2160	2090	2270	2530	1220	610	1230	1890	587
29	2010	2390	2110	2160	2110	2260	2540	1150	624	1240	1880	505
30	2020	2380	2100	2170	---	2260	2550	1130	664	1250	1880	606
31	2010	---	2080	2160	---	2250	---	1210	---	1260	1890	---
MEAN	2010	2190	2260	2060	2120	2220	2370	1720	1240	1070	1920	1130

08136500 CONCHO RIVER AT PAINT ROCK, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30.0	27.0	11.0	---	6.0	13.0	19.0	22.0	33.0	31.0	33.0	---
2	31.0	19.0	10.0	13.0	10.0	11.0	25.0	22.0	29.0	31.0	32.0	31.0
3	26.0	24.0	9.0	12.0	11.0	10.0	20.0	21.0	---	33.0	32.0	27.0
4	26.0	26.0	11.0	10.0	14.0	12.0	21.0	22.0	30.0	---	33.0	31.0
5	25.0	21.0	13.0	11.0	12.0	13.0	20.0	26.0	32.0	30.0	32.0	30.0
6	35.0	15.0	12.0	12.0	12.0	16.0	---	26.0	33.0	---	33.0	31.0
7	27.0	16.0	12.0	10.0	14.0	20.0	23.0	28.0	32.0	32.0	33.0	27.0
8	28.0	20.0	12.0	12.0	9.0	16.0	20.0	22.0	---	32.0	33.0	26.0
9	22.0	16.0	13.0	11.0	7.0	---	19.0	21.0	26.0	30.0	34.0	22.0
10	24.0	15.0	13.0	15.0	---	18.0	20.0	27.0	27.0	32.0	30.0	26.0
11	25.0	16.0	15.0	12.0	9.0	17.0	22.0	---	30.0	29.0	26.0	28.0
12	30.0	12.0	12.0	13.0	12.0	20.0	15.0	25.0	28.0	33.0	29.0	30.0
13	23.0	14.0	10.0	13.0	14.0	15.0	16.0	25.0	28.0	30.0	32.0	29.0
14	25.0	14.0	9.0	16.0	17.0	19.0	21.0	22.0	30.0	34.0	33.0	29.0
15	26.0	13.0	14.0	15.0	15.0	---	18.0	23.0	29.0	35.0	34.0	28.0
16	30.0	14.0	5.0	15.0	11.0	16.0	19.0	22.0	30.0	30.0	32.0	26.0
17	26.0	---	9.0	15.0	9.0	17.0	24.0	30.0	29.0	29.0	---	29.0
18	25.0	15.0	7.0	17.0	12.0	16.0	20.0	28.0	31.0	29.0	32.0	30.0
19	28.0	18.0	10.0	16.0	14.0	18.0	25.0	26.0	30.0	32.0	30.0	32.0
20	---	20.0	10.0	13.0	15.0	17.0	25.0	26.0	30.0	30.0	30.0	31.0
21	29.0	17.0	12.0	13.0	15.0	17.0	21.0	22.0	30.0	32.0	33.0	30.0
22	23.0	15.0	16.0	11.0	20.0	20.0	24.0	23.0	22.0	33.0	29.0	27.0
23	22.0	14.0	13.0	11.0	18.0	20.0	22.0	27.0	27.0	31.0	30.0	26.0
24	22.0	15.0	12.0	10.0	15.0	16.0	23.0	32.0	33.0	31.0	33.0	29.0
25	26.0	13.0	---	12.0	11.0	18.0	23.0	---	31.0	28.0	30.0	26.0
26	---	14.0	15.0	11.0	15.0	16.0	---	---	34.0	---	30.0	24.0
27	25.0	16.0	15.0	---	18.0	18.0	20.0	28.0	34.0	32.0	32.0	23.0
28	25.0	11.0	15.0	8.0	19.0	17.0	26.0	29.0	33.0	30.0	29.0	20.0
29	25.0	12.0	10.0	8.0	18.0	20.0	21.0	29.0	34.0	29.0	32.0	20.0
30	---	10.0	12.0	8.0	---	17.0	21.0	28.0	32.0	33.0	30.0	24.0
31	18.0	---	10.0	6.0	---	20.0	---	29.0	---	30.0	31.0	---
MEAN	26.0	16.5	11.5	12.0	13.5	16.5	21.0	25.5	30.5	31.0	31.5	27.5

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	17	82	3.8	14	47	1.8	24	31	2.0
2	17	56	2.6	14	24	.91	24	13	.84
3	17	72	3.3	11	56	1.7	29	16	1.3
4	18	46	2.2	15	28	1.1	33	19	1.7
5	16	44	1.9	19	14	.72	33	25	2.2
6	16	54	2.3	19	44	2.3	32	23	2.0
7	29	58	4.5	22	64	3.8	29	37	2.9
8	27	56	4.1	20	22	1.2	29	54	4.2
9	27	107	7.8	17	24	1.1	28	26	2.0
10	22	70	4.2	16	24	1.0	28	12	.91
11	22	74	4.4	19	26	1.3	28	24	1.8
12	22	32	1.9	24	23	1.5	33	22	2.0
13	27	51	3.7	24	23	1.5	40	26	2.8
14	27	58	4.2	23	20	1.2	44	14	1.7
15	36	22	2.1	26	22	1.5	44	22	2.6
16	37	25	2.5	28	20	1.5	47	23	2.9
17	38	42	4.3	27	20	1.5	42	16	1.8
18	31	76	6.4	28	20	1.5	40	7	.76
19	25	36	2.4	30	24	1.9	38	16	1.6
20	22	43	2.6	31	26	2.2	38	20	2.1
21	19	50	2.6	29	44	3.4	36	12	1.2
22	15	70	2.8	27	30	2.2	35	20	1.9
23	14	83	3.1	26	30	2.1	49	19	2.5
24	12	76	2.5	30	23	1.9	45	30	3.6
25	11	44	1.3	26	22	1.5	76	24	4.9
26	11	43	1.3	27	18	1.3	57	19	2.9
27	12	56	1.8	27	28	2.0	44	20	2.4
28	13	56	2.0	25	27	1.8	48	20	2.6
29	13	48	1.7	22	26	1.5	52	18	2.5
30	13	53	1.9	22	49	2.9	94	16	4.1
31	13	58	2.0	---	---	---	57	27	4.2
TOTAL	639	---	94.2	688	---	51.83	1276	---	72.91

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	42	24	2.7	31	24	2.0	23	119	7.4
2	39	21	2.2	32	14	1.2	20	51	2.8
3	35	36	3.4	33	42	3.7	22	60	3.6
4	33	22	2.0	33	26	2.3	24	46	3.0
5	33	36	3.2	34	38	3.5	19	83	4.3
6	33	20	1.8	33	36	3.2	24	80	5.2
7	33	20	1.8	32	54	4.7	19	60	3.1
8	33	20	1.8	36	32	3.1	20	32	1.7
9	33	14	1.2	33	28	2.5	21	49	2.8
10	34	26	2.4	37	26	2.6	20	66	3.6
11	33	32	2.9	46	24	3.0	18	74	3.6
12	32	58	5.0	44	38	4.5	18	75	3.6
13	32	36	3.1	39	24	2.5	15	66	2.7
14	31	54	4.5	38	26	2.7	12	52	1.7
15	31	26	2.2	37	31	3.1	11	51	1.5
16	31	63	5.3	35	46	4.3	9.9	50	1.3
17	31	59	4.9	33	40	3.6	5.9	63	1.0
18	31	60	5.0	33	25	2.2	4.6	62	.77
19	32	62	5.4	33	34	3.0	4.8	36	.47
20	33	57	5.1	34	86	7.9	8.0	51	1.1
21	33	26	2.3	33	58	5.2	5.2	55	.77
22	45	10	1.2	31	169	14	5.1	63	.87
23	39	24	2.5	28	70	5.3	3.2	70	.60
24	48	23	3.0	28	107	8.1	3.0	81	.66
25	48	28	3.6	31	76	6.4	.63	124	.21
26	40	25	2.7	28	78	5.9	.88	106	.25
27	36	31	3.0	27	81	5.9	1.7	110	.50
28	35	32	3.0	27	88	6.4	6.8	97	1.8
29	32	17	1.5	27	77	5.6	3.3	114	1.0
30	31	22	1.8	---	---	---	4.5	126	1.5
31	31	33	2.8	---	---	---	3.3	124	1.1
TOTAL	1083	---	93.3	966	---	128.4	356.81	---	64.50

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	14	122	4.6	.98	46	.12	32	110	9.5
2	14	93	3.5	1.1	43	.13	29	64	5.0
3	9.8	44	1.2	1.6	55	.24	26	88	6.2
4	6.4	90	1.6	3.2	43	.37	25	97	6.5
5	3.7	95	.95	1.9	41	.21	23	69	4.3
6	2.0	84	.45	12	40	1.3	20	52	2.8
7	2.0	73	.39	42	79	9.0	17	55	2.5
8	1.1	76	.23	226	66	40	39	65	6.8
9	1.1	57	.17	76	58	12	63	74	13
10	1.0	62	.17	41	18	2.0	172	100	46
11	.99	50	.13	42	57	6.5	139	120	45
12	.70	57	.11	70	68	13	86	140	33
13	1.6	27	.12	53	78	11	98	76	20
14	1.1	33	.10	38	80	8.2	60	60	9.7
15	1.5	38	.15	59	92	15	43	46	5.3
16	2.6	46	.32	466	145	182	35	80	7.6
17	3.2	56	.48	249	124	83	29	48	3.8
18	3.0	50	.41	106	38	11	27	39	2.8
19	5.2	41	.58	70	82	15	22	42	2.5
20	6.0	36	.58	59	48	7.6	16	70	3.0
21	5.7	44	.68	302	135	110	679	206	761
22	5.1	56	.77	120	76	25	294	202	196
23	4.4	52	.62	89	57	14	63	170	29
24	3.5	58	.55	60	55	8.9	50	42	5.7
25	1.7	48	.22	48	55	7.1	55	47	7.0
26	.56	42	.06	103	87	24	36	60	5.8
27	1.1	36	.11	75	74	15	25	34	2.3
28	1.2	28	.09	52	95	13	18	63	3.1
29	.99	50	.13	48	78	10	14	61	2.3
30	.91	60	.15	36	95	9.2	12	39	1.3
31	---	---	---	33	84	7.5	---	---	---
TOTAL	106.15	---	19.62	2583.78	---	661.37	2247	---	1248.8

08136500 CONCHO RIVER AT PAINT ROCK, TX--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	9.6	38	.98	14	87	3.3	.05	48	.0
2	8.4	58	1.3	14	44	1.7	.05	54	.0
3	6.2	44	.74	13	85	3.0	.05	45	.0
4	4.0	47	.51	13	82	2.9	.03	36	.0
5	2.2	52	.31	12	73	2.4	.03	28	.0
6	1.2	55	.18	20	43	2.3	.10	18	.0
7	14	64	2.4	41	45	5.0	.20	44	.0
8	16	49	2.1	43	42	4.9	6430	2710	61500
9	12	52	1.7	31	55	4.6	23800	4190	269000
10	8.4	59	1.3	27	90	6.6	8650	2950	83500
11	7.2	50	.97	20	44	2.4	866	270	631
12	5.0	65	.88	41	68	7.5	239	72	46
13	4.0	58	.63	38	42	4.3	114	21	6.5
14	4.0	53	.57	31	52	4.4	70	20	3.8
15	4.0	21	.23	25	38	2.6	52	19	2.7
16	2.2	58	.34	24	56	3.6	44	24	2.9
17	1.2	40	.13	22	50	3.0	37	30	3.0
18	.76	73	.15	20	50	2.7	32	25	2.2
19	.76	78	.16	17	44	2.0	30	14	1.1
20	.76	38	.08	46	50	6.2	27	13	1.0
21	.39	40	.04	31	48	4.0	25	15	1.0
22	.20	58	.03	22	54	3.2	23	15	.9
23	.20	37	.02	16	60	2.6	22	38	2.3
24	.39	37	.04	9.6	55	1.4	22	46	2.7
25	.39	45	.05	7.2	46	.89	32	14	1.2
26	.20	50	.03	5.0	56	.76	133	30	11
27	.10	42	.01	2.2	61	.36	497	195	984
28	.39	37	.04	1.2	49	.16	3680	920	9690
29	11	37	1.1	.76	50	.10	1090	250	736
30	8.4	47	1.1	.76	42	.09	470	80	102
31	7.2	46	.89	.10	48	.01	---	---	---
TOTAL	140.74	---	19.01	607.82	---	88.97	46385.51	---	426231.3

08136700 COLORADO RIVER NEAR STACY, TX
(National stream-quality accounting network)

LOCATION.--Lat 31°29'37", long 99°34'25", Coleman County, Hydrologic Unit 12090106, on left bank at downstream side of bridge on Farm Road 503, 1.2 mi (1.9 km) upstream from Bois d'Arc Creek, 1.8 mi (2.9 km) northeast of Stacy, 24 mi (39 km) downstream from Concho River, and at mile 604.8 (973.1 km).

DRAINAGE AREA.--24,040 mi² (62,260 km²), approximately, of which 12,880 mi² (33,360 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1968 to current year. Prior to October 1970, published as "at Stacy".

GAGE.--Water-stage recorder. Datum of gage is 1,394.66 ft (425.092 m) National Geodetic Vertical Datum of 1929 (State Department of Highways and Public Transportation bridge plans).

REMARKS.--Water-discharge records good. Many diversions above station for irrigation, municipal, and oilfield operation uses. Effluent from numerous sewage plants is returned to the river. Flow is affected by reservoirs upstream (see stations 08126380 and 08136000) and at times by discharge from the flood-detention pools of 42 floodwater-retarding structures with combined detention capacity of 56,730 acre-ft (69.9 hm³). These structures control runoff from 277 mi² (717 km²).

AVERAGE DISCHARGE.--12 years (water years 1969-80), 222 ft³/s (6.287 m³/s), 160,800 acre-ft/yr (198 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,000 ft³/s (1,270 m³/s) Sept. 10, 1980, gage height, 28.00 ft (8.534 m); no flow June 22 to Aug. 3, 1974, and Aug. 5-16, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since since at least 1882, 356,000 ft³/s (10,100 m³/s) Sept. 18, 1936, gage height, 64.59 ft (19.687 m), by slope-area measurement of peak flow. The flood of Sept. 18, 1936, was 4 ft (1.2 m) higher than the 1906 flood and 7 to 8 ft (2.1 to 2.4 m) higher than the 1882 flood, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 45,000 ft³/s (1,270 m³/s) Sept. 10 at 0100 hours, gage height, 28.00 ft (8.534 m); no flow Aug. 5-16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	17	30	114	57	50	17	.18	83	24	.06	2.3
2	25	17	28	93	55	48	31	.29	59	17	.06	2.1
3	24	18	27	79	54	46	23	.12	47	13	.05	1.7
4	25	18	27	70	55	41	18	.33	39	9.9	.02	1.6
5	22	19	28	64	55	40	14	.87	31	7.3	.00	1.3
6	20	19	29	58	56	41	14	2.5	25	5.8	.00	1.0
7	20	17	33	55	55	42	14	37	22	4.9	.00	1.1
8	19	20	36	55	67	41	10	114	41	4.1	.00	3880
9	17	23	36	55	72	41	8.4	258	555	3.4	.00	23400
10	21	27	34	54	69	38	6.9	152	161	2.8	.00	31300
11	28	27	31	52	80	36	5.5	74	101	2.5	.00	5150
12	29	25	37	51	90	36	4.9	134	175	2.3	.00	1290
13	26	23	51	49	90	33	7.7	90	108	2.2	.00	650
14	28	21	44	48	86	30	7.4	310	81	1.7	.00	416
15	31	24	43	48	79	28	6.5	677	78	1.5	.00	298
16	39	28	50	48	76	27	5.0	1300	55	2.5	4.8	212
17	39	28	48	48	72	22	3.7	1210	41	2.3	23	170
18	46	32	47	48	70	20	2.8	486	32	2.0	28	137
19	50	33	52	47	68	17	2.6	230	27	1.8	25	111
20	50	31	50	50	67	14	2.4	146	22	1.5	89	93
21	42	30	48	50	64	14	1.8	116	20	1.3	66	82
22	34	29	50	93	63	12	1.3	481	2320	.86	55	76
23	31	27	69	91	63	9.6	1.1	363	3670	.55	40	70
24	27	27	84	76	62	8.9	.78	174	973	.39	28	68
25	24	26	76	68	59	9.0	.47	114	331	.32	20	1540
26	22	26	67	74	54	9.3	.26	76	168	.24	12	961
27	21	24	92	80	53	12	.14	58	99	.22	7.2	593
28	20	26	100	70	56	13	.14	95	66	.21	6.1	7910
29	19	26	91	67	52	11	.10	102	45	.17	6.1	7090
30	17	31	78	63	---	9.6	.06	187	32	.13	3.8	3070
31	17	---	79	60	---	9.9	---	142	---	.09	2.7	---
TOTAL	857	739	1595	1978	1899	809.3	210.95	7130.29	9507	116.98	416.89	88578.1
MEAN	27.6	24.6	51.5	63.8	65.5	26.1	7.03	230	317	3.77	13.4	2953
MAX	50	33	100	114	90	50	31	1300	3670	24	89	31300
MIN	17	17	27	47	52	8.9	.06	.12	20	.09	.00	1.0
AC-FT	1700	1470	3160	3920	3770	1610	418	14140	18860	232	827	175700

CAL YR 1979 TOTAL 37774.50 MEAN 103 MAX 1830 MIN 9.5 AC-FT 74930
WTR YR 1980 TOTAL 113837.51 MEAN 311 MAX 31300 MIN .00 AC-FT 225800

08136700 COLORADO RIVER NEAR STACY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: April 1968 to current year. Sediment analyses: October 1974 to September 1979 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1968 to current year.
WATER TEMPERATURES: April 1968 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,580 micromhos Sept. 23, 1970; minimum daily, 188 micromhos July 29, 1971.
WATER TEMPERATURES: Maximum daily, 35.0°C July 1, 1980; minimum daily, 2.0°C Jan. 8, 1970, Dec. 16, 1972, and Jan. 12, 1973.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,250 micromhos Apr. 30, May 1; minimum daily, 284 micromhos Sept. 10.
WATER TEMPERATURES: Maximum daily, 35.0°C July 1.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT 25...	0930	23	2090	7.9	19.0	650	500	130	78	210
DEC 06...	0940	28	1970	--	9.0	570	410	120	65	180
FEB 21...	1205	63	2240	--	13.0	750	600	170	80	190
MAR 14...	1700	30	2090	--	16.0	650	540	140	74	200
MAY 31...	1300	136	1280	8.0	27.0	360	210	83	36	120
JUN 27...	0900	102	583	--	31.0	170	74	46	14	43
JUL 31...	1306	.09	725	--	32.0	200	120	46	21	62
AUG 30...	1305	4.6	1520	--	31.0	450	350	110	43	140
SEP 30...	1300	2710	397	--	20.0	140	33	43	7.8	22

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 25...	3.6	5.7	180	0	310	440	.5	16	1280
DEC 06...	3.3	5.3	190	0	250	380	.5	5.2	1100
FEB 21...	3.0	5.4	190	0	410	410	.5	6.6	1370
MAR 14...	3.4	5.5	140	0	340	410	.5	4.4	1240
MAY 31...	2.8	6.6	180	0	150	230	.6	15	730
JUN 27...	1.4	5.5	120	0	63	83	.3	6.1	320
JUL 31...	1.9	6.4	100	0	97	110	.4	14	406
AUG 30...	2.9	8.4	110	0	260	290	.5	17	901
SEP 30...	.8	4.6	130	0	29	44	.2	12	227

08136700 COLORADO RIVER NEAR STACY, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	857	2060	1220	2820	390	900	320	744	630
NOV.	1979	739	1970	1160	2310	370	737	300	598	600
DEC.	1979	1595	1970	1160	4980	370	1590	300	1290	600
JAN.	1980	1978	1840	1080	5760	340	1830	270	1460	560
FEB.	1980	1899	1990	1170	6020	370	1920	310	1570	610
MAR.	1980	809.3	2170	1290	2810	410	899	350	757	660
APR.	1980	210.95	2160	1280	731	410	234	350	197	660
MAY	1980	7130.29	1070	607	11700	190	3670	130	2490	310
JUNE	1980	9507	677	376	9640	120	2990	69	1780	190
JULY	1980	116.98	598	330	104	100	32	59	19	170
AUG.	1980	416.89	1240	704	792	220	249	150	173	360
SEPT	1980	88578.1	406	223	53400	69	16500	38	9080	120
TOTAL		113837.51	**	**	101000	**	31500	**	20200	**
WTD. AVG.		311	586	329	**	100	**	66	**	170

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1950	2040	1950	1940	1660	2210	2110	2250	1150	556	729	1520
2	1960	2050	1960	1950	1690	2200	2070	2220	1000	568	740	1520
3	1990	2040	1950	1990	1710	2200	2150	2240	846	572	755	1530
4	1970	2030	1980	2010	1730	2190	2190	2220	783	580	770	1530
5	1990	2030	1970	2020	1750	2170	2180	2200	767	586	---	1540
6	2000	2020	1970	2040	1780	2160	2200	2220	771	595	---	1540
7	2010	2010	1940	2060	1800	2140	2210	1440	782	602	---	1550
8	2040	2000	1910	2080	1830	2150	2230	952	760	613	---	1000
9	2050	1970	1920	2090	1870	2130	2210	750	692	614	---	430
10	2030	1930	1940	2100	1910	2120	2220	1680	849	619	---	284
11	2040	1940	1970	2120	1880	2140	2220	1950	808	633	---	321
12	2050	1950	1900	2140	1830	2150	2200	1370	728	637	---	390
13	2060	1960	1880	2160	1850	2160	2160	1440	749	645	---	457
14	2040	1960	1940	2170	1930	2150	2170	1000	790	654	---	520
15	2070	1930	1970	2190	2010	2160	2190	382	1000	664	---	594
16	2080	1950	1930	2180	2060	2150	2180	792	1200	669	814	650
17	2100	1970	1950	2160	2130	2140	2170	1180	1280	676	860	693
18	2110	1950	1980	2190	2160	2140	2180	1350	1350	685	910	732
19	2100	1960	1960	2180	2190	2160	2180	1420	1360	694	935	753
20	2100	1950	2000	1750	2210	2180	2170	1470	1360	700	1230	790
21	2120	1970	2040	1800	2240	2190	2190	1420	1370	713	1280	830
22	2110	1960	2000	1400	2220	2210	2190	1100	750	725	1330	851
23	2090	1950	2030	1410	2210	2200	2200	1250	596	729	1290	881
24	2100	1970	2060	1490	2220	2240	2190	1270	556	738	1350	912
25	2090	1960	2050	1540	2210	2230	2200	1320	614	733	1440	856
26	2100	1980	2070	1500	2200	2220	2230	1380	587	726	1490	410
27	2110	1990	2050	1460	2210	2200	2240	1420	575	725	1500	425
28	2090	1970	1850	1510	2200	2180	2230	1290	565	727	1520	460
29	2080	1960	1870	1550	2200	2170	2240	1070	560	738	1510	382
30	2070	1940	1910	1600	---	2200	2250	1130	555	748	1520	398
31	2060	---	1980	1640	---	2190	---	1280	---	725	1530	---
MEAN	2060	1980	1960	1880	2000	2180	2190	1430	858	664	1180	825

08136700 COLORADO RIVER NEAR STACY, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.0	15.0	---	10.0	---	---	---	25.0	---	35.0	32.0	---
2	27.0	14.0	10.0	11.0	---	---	---	25.0	28.0	33.0	30.0	31.0
3	25.0	---	11.0	11.0	---	---	---	22.0	27.0	32.0	---	31.0
4	26.0	16.0	---	---	---	---	---	---	29.0	---	27.0	31.0
5	25.0	18.0	---	---	---	---	---	25.0	30.0	32.0	---	30.0
6	---	---	---	---	---	---	---	27.0	30.0	---	---	28.0
7	25.0	15.0	---	---	---	---	20.0	24.0	31.0	32.0	---	---
8	26.0	---	---	---	---	---	17.0	19.0	---	32.0	---	25.0
9	23.0	---	---	---	---	---	22.0	21.0	25.0	31.0	---	22.0
10	23.0	---	---	---	---	15.0	24.0	24.0	27.0	32.0	---	23.0
11	24.0	---	---	---	---	15.0	26.0	---	26.0	32.0	---	24.0
12	22.0	---	---	---	---	16.0	17.0	26.0	28.0	33.0	---	26.0
13	---	13.0	---	---	---	15.0	---	24.0	29.0	---	---	28.0
14	24.0	13.0	---	---	---	16.0	17.0	22.0	30.0	32.0	---	---
15	23.0	---	---	---	---	---	22.0	20.0	---	33.0	---	31.0
16	24.0	12.0	---	---	---	---	21.0	21.0	30.0	32.0	29.0	29.0
17	26.0	---	---	---	---	14.0	20.0	25.0	31.0	32.0	---	27.0
18	25.0	---	---	---	---	15.0	20.0	---	30.0	32.0	28.0	30.0
19	24.0	12.0	---	---	---	---	27.0	24.0	28.0	32.0	26.0	30.0
20	24.0	---	---	8.0	---	---	---	26.0	32.0	---	28.0	30.0
21	---	---	---	8.0	---	---	24.0	25.0	30.0	31.0	28.0	---
22	21.0	---	---	8.0	17.0	---	24.0	24.0	---	30.0	30.0	31.0
23	19.0	---	---	---	14.0	---	26.0	25.0	27.0	31.0	30.0	27.0
24	19.0	---	12.0	---	---	---	27.0	27.0	29.0	29.0	---	28.0
25	---	---	12.0	---	14.0	---	22.0	---	31.0	31.0	33.0	26.0
26	---	---	13.0	---	20.0	---	21.0	---	32.0	32.0	30.0	22.0
27	---	11.0	12.0	---	19.0	---	---	29.0	32.0	---	30.0	22.0
28	---	10.0	---	---	19.0	---	23.0	27.0	33.0	32.0	31.0	---
29	---	9.0	---	---	18.0	---	24.0	28.0	---	31.0	30.0	19.0
30	---	---	11.0	---	---	---	23.0	27.0	32.0	30.0	31.0	20.0
31	17.0	---	10.0	---	---	---	---	27.0	---	32.0	---	---
MEAN	23.5	13.0	11.5	9.5	17.5	15.0	22.0	24.5	29.5	32.0	29.5	27.0

08138000 COLORADO RIVER AT WINCHELL, TX

LOCATION.--Lat 31°28'04", long 99°09'43", McCulloch-Brown County line, Hydrologic Unit 12090106, near left bank on downstream end of pier of bridge on U.S. Highway 377, 0.3 mi (0.5 km) south of Winchell, 5.9 mi (9.5 km) downstream from Home Creek, and at mile 560.7 (902.2 km).

DRAINAGE AREA.--24,580 mi² (63,660 km²), approximately, of which 12,880 mi² (33,360 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1923 to September 1934 (published as "near Milburn"), June 1939 to current year.

REVISED RECORDS.--WSP 1118: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,264.86 ft (385.529 m) National Geodetic Vertical Datum of 1929. November 1923 to September 1934, nonrecording gage at site 4.2 mi (6.8 km) downstream at datum 10.14 ft (3.091 m) lower. Jan. 13, 1939, to Mar. 24, 1940, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records good. Many diversions above station for irrigation, muincipal supply, and oilfield operation. Flow is affected by reservoirs upstream (see stations 08126380 and 08136000) and at times by discharge from the flood-dentention pools of 87 floodwater-retarding structures with a combined detention capacity of 103,000 acre-ft (127 hm³). These structures control runoff from 502 mi² (1,300 km²).

AVERAGE DISCHARGE.--39 years (water years 1925-34, 1940-68) prior to completion of Robert Lee Dam, 628 ft³/s (17.78 m³/s), 455,000 acre-ft/yr (561 hm³/yr); 12 years (water years 1969-80) partially regulated, 268 ft³/s (7.590 m³/s), 194,200 acre-ft/yr (239 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 76,100 ft³/s (2,160 m³/s) Oct. 15, 1930, gage height, 51.8 ft (15.79 m), present site and datum; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Highest stages since 1882 were 62.2 ft (18.96 m) Sept. 19, 1936, and 56.2 ft (17.13 m) Aug. 8, 1906, at railway bridge 1,000 ft (305 m) upstream and converted to present site and datum, from information by Gulf, Colorado, and Santa Fe Railway Co.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 41,700 ft³/s (1,180 m³/s) Sept. 10 at 1900 hours, gage height, 38.04 ft (11.595 m), no other peak above base of 12,000 ft³/s (340 m³/s); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	14	19	96	47	41	13	2.5	210	52	.00	8.0
2	22	13	20	72	46	41	13	2.9	131	42	.00	5.9
3	18	14	23	81	45	39	13	2.7	90	34	.00	4.1
4	14	14	24	66	44	38	12	3.3	69	29	.00	2.9
5	14	14	22	56	43	37	15	3.1	56	24	.00	1.5
6	14	13	20	50	43	36	23	5.2	46	20	.00	.7
7	15	14	20	45	44	34	20	843	39	16	.00	.2
8	15	14	21	42	44	33	17	1930	130	14	.00	.0
9	13	15	22	41	46	35	14	580	1350	12	.00	18800
10	11	15	26	40	52	36	14	270	763	11	.00	37500
11	10	14	27	40	54	36	14	198	282	8.9	.00	21300
12	11	16	32	40	53	34	15	230	150	7.8	.00	2150
13	11	18	34	39	66	32	21	480	180	6.5	.00	1030
14	16	20	34	40	73	32	16	1220	134	5.4	.00	766
15	21	20	37	41	72	31	14	5360	94	4.5	.00	493
16	20	19	38	41	66	29	13	3200	86	3.6	.00	318
17	21	18	33	40	61	26	12	1640	71	2.8	.00	220
18	24	20	37	39	57	25	11	924	55	2.1	.00	160
19	27	25	38	39	54	23	10	504	45	1.5	.00	130
20	29	26	38	38	54	21	9.5	273	48	1.4	.00	120
21	35	27	42	41	53	18	7.0	415	90	1.2	.00	110
22	37	26	43	55	51	18	5.4	279	907	1.0	.00	90
23	32	24	46	90	50	17	6.6	475	3880	.37	.00	82
24	28	24	51	75	49	15	6.2	341	1730	.01	8.4	75
25	25	23	59	69	48	14	5.1	203	648	.00	45	5770
26	23	23	62	58	47	14	3.8	209	319	.00	36	5000
27	21	22	55	52	45	14	3.4	123	193	.00	27	1700
28	18	22	60	58	42	20	3.1	639	135	.00	22	5020
29	17	20	105	59	42	17	2.8	678	94	.00	18	11300
30	16	20	78	54	---	15	2.4	448	68	.00	14	6200
31	15	---	63	50	---	14	---	287	---	.00	11	---
TOTAL	618	567	1229	1607	1491	835	335.3	21768.7	12093	301.08	181.40	118357.3
MEAN	19.9	18.9	39.6	51.8	51.4	26.9	11.2	702	403	9.71	5.85	3945
MAX	37	27	105	90	73	41	23	5360	3880	52	45	37500
MIN	10	13	19	38	42	14	2.4	2.5	39	.00	.00	.00
AC-FT	1230	1120	2440	3190	2960	1660	665	43180	23990	597	360	234800

CAL YR 1979 TOTAL 39629.70 MEAN 109 MAX 3670 MIN 8.9 AC-FT 78610
WTR YR 1980 TOTAL 159383.78 MEAN 435 MAX 37500 MIN .00 AC-FT 316100

08138000 COLORADO RIVER AT WINCHELL, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: November 1967 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	TEMPER-ATURE, WATER (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT 24...	1245	28	1880	19.0	510	380	99	64	170
DEC 05...	1230	21	2220	8.0	640	510	120	82	230
JAN 10...	1045	39	2000	9.0	580	440	120	69	190
FEB 20...	1430	53	1940	13.0	550	400	120	61	170
APR 02...	1250	13	2340	21.0	700	590	150	78	210
MAY 14...	0900	190	1190	23.0	380	290	97	34	95
JUN 25...	1140	607	522	28.0	180	81	52	12	29
SEP 16...	1030	322	520	26.0	170	62	49	12	36

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 24...	3.3	8.3	160	0	270	360	.5	13	1080
DEC 05...	4.0	6.7	150	0	330	470	.6	4.2	1320
JAN 10...	3.4	5.1	180	0	310	360	.3	2.5	1150
FEB 20...	3.2	5.6	190	0	290	360	.4	4.9	1110
APR 02...	3.5	6.0	132	0	390	420	.5	.0	1320
MAY 14...	2.1	6.2	110	0	220	180	.5	7.5	694
JUN 25...	.9	6.4	120	0	84	56	.3	8.7	308
SEP 16...	1.2	5.5	130	0	55	68	.3	10	302

08140600 LAKE CLYDE NEAR CLYDE, TX

LOCATION.--Lat 32°19'05", long 99°28'43", Callahan County, Hydrologic Unit 12090107, at Clyde pump station, 0.6 mi (1.0 km) west of dam on North Prong Pecan Bayou, 2.1 mi (3.4 km) downstream from bridge on Farm Road 604, and 7.0 mi (11.3 km) southeast of Clyde.

DRAINAGE AREA.--37.9 mi² (98.2 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1970 to current year.

GAGE.--Nonrecording gage. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by a rolled earthfill dam, 3,950 ft (1,204 m) long. Appreciable storage began in April 1970, and the dam was completed in May 1970. The uncontrolled emergency spillways are two 200-foot-wide (61 m) cut channels through natural ground located at left end of dam. The service spillway is an uncontrolled 3.5- by 10.5-foot (1.1 by 3.2 m) reinforced concrete drop inlet connected to a 42-inch (1,067 mm) concrete outlet pipe. A 14-inch (356 mm) controlled drain pipe is connected to the drop inlet. There are four 4.83- by 3.50-foot (1.47 by 1.07 m) rectangular slots, two on each side, divided by a 10-inch (254 mm) concrete web. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	1,888.9	16,530
Crest of spillway	1,881.4	10,840
Crest of spillway (invert of drop inlet)	1,872.0	5,720
Lowest gated outlet (invert)	1,842.2	60

COOPERATION.--Record of lake elevations and diversions were furnished by the city of Clyde. Capacity table was furnished by the Soil Conservation Service.

EXTREMES (at 0700) FOR PERIOD OF RECORD.--Maximum contents, 7,420 acre-ft (9.15 hm³) Aug. 4, 1978, elevation, 1,875.5 ft (571.65 m); minimum, 1,460 acre-ft (1.80 hm³) Aug. 1, 2, 1978, elevation, 1,858.8 ft (566.56 m).

EXTREMES (at 0700) FOR CURRENT YEAR.--Maximum contents, 4,620 acre-ft (5.70 hm³) Oct. 1, elevation, 1,869.4 ft (569.79 m); minimum, 2,340 acre-ft (2.89 hm³) Aug. 15, 16, elevation, 1,862.6 ft (567.72 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

1,862.0	2,190
1,866.0	3,370
1,870.0	4,860

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 0700

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4620	4350	4120	3970	3790	3610	3470	3200	3510	2710	2450	2590
2	4580	4350	4120	3970	3790	3610	3470	3200	3510	2680	2450	2590
3	4580	4350	4120	3970	3790	3610	3440	3200	3510	2680	2450	2590
4	4580	4350	4080	3930	3790	3610	3440	3200	3510	2650	2450	2590
5	4540	4310	4080	3930	3790	3610	3440	3200	3470	2650	2430	2560
6	4540	4310	4080	3930	3750	3610	3440	3170	3470	2620	2430	2560
7	4540	4310	4080	3930	3750	3580	3440	3200	3470	2620	2400	2560
8	4540	4310	4080	3930	3750	3580	3400	3240	3470	2620	2400	2560
9	4540	4310	4080	3930	3750	3580	3400	3240	3540	2590	2400	2560
10	4540	4270	4050	3900	3750	3580	3400	3240	3510	2590	2400	2560
11	4500	4270	4050	3900	3750	3580	3370	3200	3510	2560	2400	2560
12	4500	4270	4050	3900	3720	3580	3370	3200	3510	2560	2370	2560
13	4500	4270	4050	3900	3720	3540	3370	3200	3510	2560	2370	2560
14	4500	4270	4050	3860	3720	3540	3370	3270	3470	2560	2370	2540
15	4500	4230	4010	3860	3720	3540	3370	3370	3470	2560	2340	2540
16	4460	4230	4010	3860	3720	3540	3370	3370	3470	2540	2340	2540
17	4460	4230	4010	3860	3720	3540	3370	3370	3470	2540	2450	2540
18	4460	4230	4010	3860	3680	3510	3370	3370	3440	2540	2680	2540
19	4460	4230	4010	3830	3680	3510	3340	3370	3440	2540	2680	2540
20	4460	4190	4010	3830	3680	3510	3340	3370	3440	2540	2650	2510
21	4460	4190	3970	3830	3680	3510	3340	3510	3400	2540	2650	2510
22	4460	4190	3970	3860	3680	3510	3340	3510	3400	2540	2620	2510
23	4420	4190	3970	3830	3650	3470	3340	3510	3400	2510	2620	2510
24	4420	4160	3930	3830	3650	3470	3340	3510	3400	2510	2620	2510
25	4420	4160	3930	3830	3650	3470	3340	3510	3370	2510	2620	2590
26	4390	4160	3930	3830	3650	3470	3300	3510	3370	2510	2620	2620
27	4390	4160	3930	3830	3650	3470	3270	3470	3370	2480	2620	2620
28	4390	4160	3930	3830	3650	3510	3240	3540	3370	2480	2620	2650
29	4390	4120	3930	3830	3650	3470	3200	3540	3340	2480	2620	2650
30	4390	4120	3970	3790	---	3470	3200	3540	3340	2480	2620	2680
31	4390	---	3970	3790	---	3470	---	3510	---	2450	2590	---
MAX	4620	4350	4120	3970	3790	3610	3470	3540	3540	2710	2680	2680
MIN	4390	4120	3930	3790	3650	3470	3200	3170	3340	2450	2340	2510
(†)	1868.8	1868.1	1867.7	1867.2	1866.8	1866.3	1865.5	1866.4	1865.9	1863.0	1863.5	1863.8
(‡)	-230	-270	-150	-180	-140	-180	-270	+310	-170	-890	+140	+90
(††)	34	23	24	22	22	28	35	31	43	65	51	40

CAL YR 1979 MAX 5810 MIN 3930 ‡ -1060 †† 367
WTR YR 1980 MAX 4620 MIN 2340 ‡ -1940 †† 418

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal use.

08140600 LAKE CLYDE NEAR CLYDE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
OCT 17...	0925	671	20.0	170	37	52	9.3	61	2.0

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
OCT 17...	7.6	160	0	43	100	.3	4.6	357

08140800 JIM NED CREEK NEAR COLEMAN, TX

LOCATION.--Lat 31°58'59", long 99°24'52", Coleman County, Hydrologic Unit 12090108, on right bank 77 ft (23 m) downstream from centerline of U.S. Highway 283, 1.4 mi (2.3 km) downstream from Turtle Bayou, 7.4 mi (11.9 km) downstream from Lake Coleman, and 10.8 mi (17.4 km) north of Coleman.

DRAINAGE AREA.--333 mi² (862 km²), of which 299 mi² (774 km²) is above Lake Coleman.

PERIOD OF RECORD.--October 1961 to September 1964 (miscellaneous measurements only), March 1965 to September 1980 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 1,592.31 ft (485.336 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Since March 1966 when deliberate impoundment began, flow has been largely controlled by Lake Coleman, capacity, 40,000 acre-ft (49.3 hm³) at service spillway; elevation, 1,717.5 ft (523.49 m). During year, the city of Coleman diverted 1,410 acre-ft (1.74 hm³) from Lake Coleman for municipal use. At end of year, flow from 22.0 mi² (57.0 km²) above this station and below Lake Coleman was affected at times by discharge from flood-detention pools of two floodwater-retarding structures with a combined detention capacity of 6,560 acre-ft (8.09 hm³). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--15 years, 21.5 ft³/s (0.609 m³/s), 15,580 acre-ft/yr (19.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,020 ft³/s (142 m³/s) May 6, 1969, gage height, 9.08 ft (2.768 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 181 ft³/s (5.13 m³/s) Sept. 29 at 0400 hours, gage height, 2.29 ft (0.698 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.17	.22	.24	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.17	.22	.22	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.17	.22	.28	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.20	.22	.34	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.22	.22	.42	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.25	.22	.34	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.35	.22	.34	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	3.6	.22	.42	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	7.1	.22	.42	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	3.3	.22	.34	.03	.00	.00	.00	.00
11	.00	.00	.00	.00	1.5	.22	.34	.01	.00	.00	.00	.00
12	.00	.00	.00	.00	.92	.22	.28	.01	.00	.00	.00	.00
13	.00	.00	.00	.00	.55	.22	.22	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.34	.28	.22	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.28	.34	.13	.15	.00	.00	.00	.00
16	.00	.00	.00	.00	.28	.42	.08	.39	.00	.00	.00	.00
17	.00	.00	.00	.00	.22	.42	.06	.37	.00	.00	.00	.00
18	.00	.00	.00	.00	.17	.62	.01	.14	.00	.00	.00	.00
19	.00	.00	.00	.00	.13	.73	.00	.03	.00	.00	.00	.00
20	.00	.00	.00	.00	.13	.86	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.17	.86	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.17	1.0	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	6.3	.28	1.2	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	1.4	.28	1.2	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.61	.28	1.4	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.30	.28	1.4	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.22	.28	1.4	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.13	.28	1.6	.00	4.4	.00	.00	.00	87
29	.00	.00	.00	.13	.28	.86	.00	3.2	.00	.00	.00	152
30	.00	.00	.00	.14	---	.62	.00	.29	.00	.00	.00	70
31	.00	---	.00	.17	---	.28	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	9.40	22.35	18.35	4.70	9.02	.00	.00	.00	309.00
MEAN	.000	.000	.000	.30	.77	.59	.16	.29	.000	.000	.000	10.3
MAX	.00	.00	.00	6.3	7.1	1.6	.42	4.4	.00	.00	.00	152
MIN	.00	.00	.00	.00	.13	.22	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	19	44	36	9.3	18	.00	.00	.00	613

CAL YR 1979	TOTAL	3851.12	MEAN 10.6	MAX 340	MIN .00	AC-FT 7640
WTR YR 1980	TOTAL	372.82	MEAN 1.02	MAX 152	MIN .00	AC-FT 739

08141000 HORDS CREEK LAKE NEAR VALERA, TX

LOCATION.--Lat 31°49'58", long 99°33'38", Coleman County, Hydrologic Unit 12090108, at outlet-works structure near right end of dam on Hords Creek, 5.6 mi (9.0 km) north of Valera, and 8.8 mi (14.2 km) west of Coleman.

DRAINAGE AREA.--48 mi² (124 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1948 to current year. Prior to October 1970, published as Hords Creek Reservoir.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by a rolled earthfill dam 6,800 ft (2,070 m) long, including spillway. The deliberate impoundment of water began Apr. 7, 1948, and the dam was completed in June 1948. The emergency spillway is an excavated channel through natural ground, 500 ft (150 m) wide, located about 600 ft (180 m) from the right end of dam. The service spillway consists of three concrete conduits; two controlled by 5.0- by 6.0-foot (1.5 by 1.8 m) slide gates, and the third an uncontrolled ogee spillway 4.0 ft (1.2 m) wide and 19.5 ft (5.9 m) high. The lake is operated for flood control and municipal water supply for the city of Coleman. The capacity table of August 1974 is based on a sedimentation survey made in 1948. Flow is affected at times by discharge from the flood-detention pool of a floodwater-retarding structure with a detention capacity of 1,370 acre-ft (1.69 hm³). This structure controls runoff from 6.82 mi² (17.7 km²) in the Jim Ned Creek drainage basin. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	1,939.0	-
Design flood	1,933.6	-
Crest of spillway	1,920.0	24,730
Crest of spillway (top of conservation pool)	1,900.0	8,110
Lowest gated outlet (invert)	1,856.0	3

COOPERATION.--Records furnished by Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 12,790 acre-ft (15.8 hm³) May 1, 1956, elevation, 1,906.86 ft (581.211 m); minimum since first appreciable storage in June 1951, 2,260 acre-ft (2.79 hm³) May 2 1980, elevation, 1,882.10 ft (573.664 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 3,200 acre-ft (3.95 hm³) Sept. 30 at 2400 hours, elevation, 1,886.48 ft (574.999 m); minimum, 2,260 acre-ft (2.79 hm³) May 2 at 1600 hours, elevation, 1,882.10 ft (573.664 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

1,882.0	2,240	1,886.0	3,090
1,884.0	2,630	1,888.0	3,600

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2830	2650	2540	2540	2520	2480	2400	2260	2950	2870	2560	2380
2	2820	2640	2540	2540	2520	2480	2390	2260	2940	2860	2550	2370
3	2810	2630	2540	2540	2510	2470	2390	2260	2940	2850	2530	2360
4	2800	2630	2530	2530	2510	2470	2380	2260	2930	2840	2560	2360
5	2790	2620	2530	2530	2510	2460	2380	2260	2920	2820	2550	2350
6	2790	2620	2530	2530	2510	2460	2380	2260	2910	2810	2540	2340
7	2780	2620	2520	2530	2510	2450	2370	2280	2910	2800	2530	2340
8	2770	2610	2520	2520	2520	2450	2370	2280	2900	2790	2520	2350
9	2760	2610	2520	2520	2520	2440	2360	2280	2900	2780	2520	2490
10	2760	2600	2520	2520	2520	2440	2360	2280	2900	2770	2510	2500
11	2750	2590	2510	2520	2520	2440	2350	2270	2900	2760	2510	2490
12	2740	2590	2510	2520	2520	2440	2360	2270	2890	2750	2500	2480
13	2740	2590	2520	2520	2520	2440	2350	2270	2880	2740	2500	2480
14	2730	2590	2530	2510	2520	2440	2350	2270	2880	2730	2490	2480
15	2720	2590	2520	2510	2520	2440	2340	2310	2870	2720	2480	2470
16	2720	2580	2520	2510	2510	2430	2340	2320	2860	2710	2480	2460
17	2720	2580	2520	2510	2510	2420	2330	2310	2850	2700	2470	2460
18	2720	2570	2520	2510	2510	2420	2330	2320	2840	2690	2470	2450
19	2710	2570	2510	2510	2510	2420	2330	2320	2840	2680	2470	2450
20	2710	2570	2510	2510	2510	2420	2330	2320	2830	2670	2460	2440
21	2700	2570	2510	2520	2500	2410	2320	2320	2840	2660	2460	2440
22	2690	2570	2520	2530	2500	2410	2310	2310	2930	2650	2450	2430
23	2690	2570	2540	2530	2500	2400	2310	2310	2930	2640	2440	2430
24	2680	2570	2540	2530	2500	2400	2300	2300	2920	2630	2440	2480
25	2680	2560	2540	2530	2490	2400	2300	2300	2920	2620	2430	2680
26	2670	2560	2530	2530	2490	2390	2290	2300	2910	2610	2420	2710
27	2670	2550	2530	2530	2490	2410	2280	2430	2900	2610	2420	2760
28	2660	2550	2550	2530	2490	2400	2280	2950	2900	2600	2410	3040
29	2660	2550	2550	2530	2480	2390	2270	2960	2890	2590	2400	3180
30	2660	2540	2540	2520	---	2400	2260	2950	2890	2580	2400	3200
31	2660	---	2540	2520	---	2400	---	2950	---	2570	2390	---
MAX	2830	2650	2550	2540	2520	2480	2400	2960	2950	2870	2560	3200
MIN	2660	2540	2510	2510	2480	2390	2260	2260	2830	2570	2390	2340
(†)	1884.10	1883.56	1883.57	1883.45	1883.28	1882.84	1882.15	1885.42	1885.14	1883.68	1882.79	1886.48
(‡)	-180	-120	0	-20	-40	-80	-140	+690	-60	-320	-180	+810
(††)	27	8.1	8.9	4.5	4.5	9.0	11	26	5.6	77	41	20

CAL YR 1979 MAX 3440 MIN 2510 ‡ -330 †† 274
WTR YR 1980 MAX 3200 MIN 2260 ‡ +360 †† 464

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.
†† Diversions, in acre-feet, for municipal use by city of Coleman.

08141000 HORDS CREEK LAKE NEAR VALERA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
OCT 23...	0820	1170	19.0	290	150	65	30	110	2.8

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
OCT 23...	7.8	160	0	53	260	.3	8.0	613

08141500 HORDS CREEK NEAR VALERA, TX

LOCATION (revised).--Lat 31°50'04", long 99°33'26", Coleman County, Hydrologic Unit 12090108, on right bank 74 ft (23 m) downstream and 50 ft (15 m) south of bridge on Farm Road 503, 1.1 mi (1.8 km) downstream from Hords Creek Dam, 5.7 mi (9.2 km) north of Valera, 7.5 mi (12.1 km) west of Coleman, and 22.3 mi (35.9 km) upstream from mouth.

DRAINAGE AREA (revised).--53.0 mi² (137.3 km²), approximately, of which 49.3 mi² (127.7 km²) is above Hords Creek Dam.

PERIOD OF RECORD.--April 1947 to current year.

GAGE (revised).--Water-stage recorder. Datum of gage is 1,826.72 ft (556.784 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Oct. 1, 1979, at site 0.5 mi (0.8 km) downstream at datum 6.84 ft (2.08 m) lower.

REMARKS.--Records good except those above 10 ft³/s (0.28 m³/s), which are fair. Flow is regulated by Hords Creek Lake (station 08141000). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--33 years, 1.67 ft³/s (0.0473 m³/s), 1,210 acre-ft/yr (1.49 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,860 ft³/s (109 m³/s) Apr. 30, 1956, gage height, 14.73 ft (4.490 m), at site 0.5 mi (0.8 km) downstream at datum 6.84 ft (2.08 m) lower, from rating curve extended above 1,900 ft³/s (53.8 m³/s); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, 23.0 ft (7.01 m) July 3, 1932, from information by local residents (discharge not determined). Flood in July or September 1900 reached a stage of 3.7 ft (1.13 m) higher than that of July 1932, 12 mi (19 km) downstream from station, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 132 ft³/s (3.74 m³/s) Sept. 25, gage height, 2.55 ft (0.777 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.19	.13	.11	.09	.05	.16	.41	.02	.00	.00
2	.00	.00	.19	.11	.08	.08	.06	.17	.38	.02	.00	.00
3	.00	.00	.19	.10	.08	.08	.06	.17	.32	.00	.00	.00
4	.00	.00	.17	.10	.08	.08	.07	.19	.27	.00	.00	.00
5	.00	.00	.17	.10	.08	.08	.07	.19	.22	.00	.00	.00
6	.00	.00	.17	.10	.10	.08	.07	.19	.20	.00	.00	.00
7	.00	.00	.17	.10	.11	.08	.08	.21	.19	.00	.00	.00
8	.00	.03	.17	.07	.37	.08	.07	.21	.17	.00	.00	.00
9	.00	.04	.17	.07	.37	.08	.07	.21	.22	.00	.00	.00
10	.00	.06	.17	.07	.29	.08	.08	.23	.20	.00	.00	.00
11	.00	.07	.17	.07	.29	.08	.08	.23	.19	.00	.00	.00
12	.00	.07	.23	.08	.26	.08	.08	.21	.18	.00	.00	.00
13	.00	.08	.26	.08	.26	.08	.09	.20	.15	.00	.00	.00
14	.00	.08	.41	.08	.26	.08	.10	.20	.13	.00	.00	.00
15	.00	.10	.33	.08	.23	.10	.10	.57	.11	.00	.00	.00
16	.00	.10	.26	.08	.23	.10	.11	.45	.09	.00	.00	.00
17	.00	.11	.21	.10	.21	.07	.11	.32	.08	.00	.00	.00
18	.00	.15	.21	.10	.23	.07	.10	.29	.07	.00	.00	.00
19	.00	.15	.21	.10	.17	.07	.10	.29	.06	.00	.00	.00
20	.00	.19	.21	.08	.15	.07	.09	.25	.06	.00	.00	.00
21	.00	.70	.21	.15	.15	.07	.08	.31	.06	.00	.00	.00
22	.00	.65	.21	.54	.15	.06	.10	.29	.16	.00	.00	.00
23	.00	.33	.75	.37	.15	.05	.10	.22	.12	.00	.00	.00
24	.00	.26	.50	.23	.15	.05	.11	.20	.08	.00	.00	2.0
25	.00	.21	.29	.19	.15	.05	.11	.18	.06	.00	.00	23
26	.00	.21	.23	.15	.15	.05	.11	.19	.05	.00	.00	3.3
27	.00	.19	.21	.15	.13	.05	.13	3.5	.05	.00	.00	11
28	.00	.19	.33	.15	.13	.05	.15	12	.05	.00	.00	22
29	.00	.19	.29	.13	.13	.05	.15	1.1	.04	.00	.00	18
30	.00	.19	.19	.13	---	.05	.15	.73	.03	.00	.00	8.1
31	.00	---	.17	.10	---	.05	---	.55	---	.00	.00	---
TOTAL	.00	4.35	7.64	4.09	5.25	2.19	2.83	24.21	4.40	.04	.00	87.40
MEAN	.000	.15	.25	.13	.18	.071	.094	.78	.15	.001	.000	2.91
MAX	.00	.70	.75	.54	.37	.10	.15	12	.41	.02	.00	23
MIN	.00	.00	.17	.07	.08	.05	.05	.16	.03	.00	.00	.00
AC-FT	.00	8.6	15	8.1	10	4.3	5.6	48	8.7	.08	.00	173

CAL YR 1979 TOTAL 101.16 MEAN .28 MAX 26 MIN .00 AC-FT 201
WTR YR 1980 TOTAL 142.40 MEAN .39 MAX 23 MIN .00 AC-FT 282

08142500 BROWN COUNTY WATER IMPROVEMENT DISTRICT NO. 1 CANAL NEAR BROWNWOOD, TX

LOCATION.--Lat 31°49'43", long 98°59'53", Brown County, Hydrologic Unit 12090107, on right bank 100 ft (30 m) upstream from bridge on Farm Road 2125, 6,000 ft (1,830 m) downstream from Brownwood Dam, and 7 mi (11 km) north of Brownwood.

PERIOD OF RECORD.--March 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,403.96 ft (427.927 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Water is released into the canal from Lake Brownwood (station 08143000) at Brownwood Dam on Pecan Bayou. Diversions began Apr. 9, 1939. A small amount of water is diverted from the canal upstream from the gage for domestic use. Water for irrigation has been diverted from the canal above gage since 1971. Records furnished by Brown County Water Improvement District No. 1 show that during the current year 1,640 acre-ft (2.02 hm^3) was diverted from the canal above gage for irrigation, and that of the total flow of canal passing gage, 8,430 acre-ft (10.4 hm^3) was used for municipal and industrial supply and 2,700 acre-ft (3.33 hm^3) was used for irrigation. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--30 years, 26.9 ft^3/s (0.762 m^3/s), 19,490 acre-ft/yr (24.0 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 77 ft^3/s (2.18 m^3/s) July 17, 1957; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	31	38	12	8.9	8.5	19	51	25	41	50	56
2	51	30	38	12	9.1	8.7	18	50	25	41	50	56
3	49	33	37	11	9.3	9.0	13	49	25	40	50	61
4	49	34	36	11	9.6	8.5	11	48	25	40	49	63
5	49	34	35	10	9.6	.05	12	48	25	40	49	62
6	48	36	34	10	9.9	1.8	9.1	48	36	40	48	60
7	48	41	33	10	9.9	13	6.9	42	45	40	48	60
8	47	42	33	13	9.3	14	19	30	45	41	49	61
9	45	42	32	.17	9.0	14	23	25	21	41	49	65
10	44	42	32	.00	9.2	14	24	25	15	39	48	66
11	44	41	31	6.9	9.4	14	29	26	12	43	48	67
12	44	42	27	25	9.6	14	31	26	11	47	49	62
13	43	45	21	24	9.9	14	28	26	16	47	49	62
14	43	45	20	17	10	14	27	24	20	46	49	62
15	43	45	20	11	11	14	24	23	21	46	50	63
16	45	45	19	11	10	14	22	22	27	47	48	63
17	51	46	18	11	10	14	19	22	35	47	47	63
18	51	46	17	11	8.8	14	18	22	36	47	48	62
19	52	44	16	11	9.1	17	18	22	36	48	49	62
20	53	37	16	11	3.2	18	19	22	36	47	51	61
21	50	34	18	11	4.2	17	10	22	37	46	52	60
22	49	34	21	11	14	19	6.2	21	38	46	52	57
23	47	33	21	11	14	19	11	21	39	47	53	52
24	44	32	20	11	15	21	11	21	39	47	54	51
25	41	32	20	12	13	24	20	21	37	48	54	51
26	40	14	19	12	6.8	24	34	21	37	48	53	51
27	40	20	19	12	7.1	21	37	26	39	48	50	49
28	42	44	16	12	8.9	18	38	29	42	48	49	47
29	42	43	13	11	9.1	18	41	27	42	50	53	41
30	40	41	13	8.8	---	19	46	26	42	52	57	34
31	34	---	12	8.7	---	19	---	26	---	49	57	---
TOTAL	1419	1128	745	348.57	276.9	457.55	644.2	912	929	1397	1562	1730
MEAN	45.8	37.6	24.0	11.2	9.55	14.8	21.5	29.4	31.0	45.1	50.4	57.7
MAX	53	46	38	25	15	24	46	51	45	52	57	67
MIN	34	14	12	.00	3.2	.05	6.2	21	11	39	47	34
AC-FT	2810	2240	1480	691	549	908	1280	1810	1840	2770	3100	3430

CAL YR 1979 TOTAL 12198.41 MEAN 33.4 MAX 53 MIN .27 AC-FT 24200
WTR YR 1980 TOTAL 11549.22 MEAN 31.6 MAX 67 MIN .00 AC-FT 22910

08143000 LAKE BROWNWOOD NEAR BROWNWOOD, TX

LOCATION.--Lat 31°50'12", long 99°00'13", Brown County, Hydrologic Unit 12090107, at outlet structure for irrigation canal just upstream from right end of dam on Pecan Bayou, 0.2 mi (0.4 km) downstream from Jim Ned Creek, 8 mi (13 km) north of Brownwood, and 57.1 mi (91.9 km) upstream from mouth.

DRAINAGE AREA.--1,535 mi² (3,976 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1933 to May 1941, November 1944 to current year. Fragmentary records July 1934 to April 1935, and October 1940 to May 1941. Prior to October 1970, published as Brownwood Reservoir.

REVISED RECORDS.--WSP 1212: 1948-50.

GAGE.--Nonrecording gage read once daily. Datum of gage is 0.50 ft (0.152 m) below National Geodetic Vertical Datum of 1929. Prior to November 1944, nonrecording gages or water-stage recorder at various sites at dam at same datum.

REMARKS.--The lake is formed by a rolled earthfill dam, 1,580 ft (482 m) long. The dam was completed in 1933 and deliberate impoundment began in July 1933. The capacity table is based on a 1959 survey. The uncontrolled emergency spillway is a broad-crested weir 479 ft (146 m) long located 800 ft (240 m) to the left of dam. The controlled service spillway consists of two 12-foot (4 m) horseshoe-shaped concrete conduits. Water is released into Brown County canal through a 5-foot (2 m) circular conduit that is controlled by a slide gate in a service structure located near the right end of dam. Water is used for irrigation, municipal, and industrial supply by the city of Brownwood (see station 08142500). Flow is affected at times by discharge from the flood-detention pools of 59 floodwater-retarding structures with a combined capacity of 73,310 acre-ft (90.4 hm³). These structures control runoff from 353 mi² (914 km²) in the Jim Ned Creek and Pecan Bayou drainage basins. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Top of dam	1,450.0	-
Crest of spillway	1,425.1	143,400
Lowest gated outlet to irrigation canal (invert)	1,406.0	46,510
Lowest gated outlet (invert)	1,330.0	-

COOPERATION.--Record of daily gage heights were furnished by Brown County Water Improvement District No. 1. Capacity table was furnished by the Corps of Engineers and by the Soil Conservation Service.

EXTREMES (at 1800) FOR PERIOD OF RECORD.--Maximum contents, 192,300 acre-ft (237 hm³) May 2, 1956, gage height, 1,431.4 ft (436.29 m); minimum, 11,900 acre-ft (14.7 hm³) July 15, 1934, gage height, 1,389.5 ft (423.52 m).

EXTREMES (at 1800) FOR CURRENT YEAR.--Maximum contents observed, 134,300 acre-ft (166 hm³) Oct. 1-3, gage height, 1,423.8 ft (433.97 m); minimum, 102,500 acre-ft (126 hm³) Sept. 22-24, gage height, 1,418.8 ft (432.45 m).

Capacity table (gage height, in feet, and total contents, in acre-feet)

1,418.0	97,850
1,421.0	115,700
1,424.0	135,700

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 1800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	134300	128700	124500	124500	123100	121700	119300	115700	124500	122400	113900	105500
2	134300	128700	124500	124500	123100	121700	119300	115100	124500	122400	113300	104900
3	134300	128700	124500	123800	123100	121700	118700	115100	123800	121700	113300	104900
4	133600	128000	124500	123800	123100	121100	118700	115100	123800	121700	112700	104900
5	133600	128000	124500	123800	123100	121100	118700	115100	123800	121100	112700	104300
6	132900	128000	124500	123800	123100	121100	118700	115100	123800	121100	112100	104300
7	132900	128000	123800	123800	123100	121100	118700	116300	123800	120500	112100	103700
8	132900	127300	123800	123800	123100	121100	118700	117500	123800	120500	111500	103700
9	132900	127300	123800	123800	123100	121100	118100	117500	125900	120500	11150C	104900
10	132200	127300	123800	123800	123100	120500	118100	117500	125900	119900	111500	104900
11	132200	127300	123800	123800	123100	120500	118100	117500	125900	119900	110900	104900
12	132200	126600	123800	123100	123100	120500	118100	117500	125900	119900	110900	104900
13	132200	126600	123800	123100	123100	120500	118100	118100	125900	119300	110300	104900
14	131500	126600	123800	123100	123100	120500	118100	118700	125200	119300	110300	104300
15	131500	126600	123800	123100	123100	120500	118100	120500	125200	118700	109700	104300
16	131500	126600	123800	123100	123100	120500	118100	123100	125200	118100	109700	104300
17	131500	125900	123800	123100	123100	120500	117500	123100	125200	117500	109100	103700
18	130800	125900	123800	123100	123100	119900	117500	123100	124500	117500	109100	103700
19	130800	125900	123800	123100	123100	119900	117500	123100	124500	117500	109100	103700
20	130800	125900	123800	123100	122400	119900	117500	123100	124500	116900	108500	103100
21	130100	125900	123800	123100	122400	119900	117500	123100	124500	116900	108500	103100
22	130100	125900	123800	123800	122400	119900	116900	123100	124500	116300	107900	102500
23	130100	125900	123800	123800	122400	119300	116900	123100	124500	116300	107900	102500
24	130100	125200	123800	123800	122400	119300	116900	123100	124500	115700	107900	102500
25	130100	125200	123800	123800	121700	119300	116300	123100	124500	115700	107300	103100
26	129400	125200	123800	123800	121700	119300	116300	123100	123800	115700	107300	103700
27	129400	125200	123800	123800	121700	119300	116300	122400	123800	115100	106700	103700
28	129400	125200	123800	123100	121700	119300	115700	124500	123800	115100	106700	105500
29	129400	125200	124500	123100	121700	119300	115700	124500	123100	114500	106700	107300
30	129400	124500	123100	123100	---	119300	115700	124500	123100	114500	106100	108500
31	128700	---	123100	123100	---	119300	---	124500	---	113900	106100	---
MAX	134300	128700	124500	124500	123100	121700	119300	124500	125900	122400	113900	108500
MIN	128700	124500	123100	123100	121700	119300	115700	115100	123100	113900	106100	102500
(†)	1423.0	1422.4	1422.2	1422.2	1422.0	1421.6	1421.0	1422.4	1422.2	1420.7	1419.4	1419.8
(‡)	-6300	-4200	-1400	0	-1400	-2400	-3600	+8800	-1400	-9200	-7800	+2400

CAL YR 1979 MAX 152600 MIN 123100 ‡ -4200
WTR YR 1980 MAX 134300 MIN 102500 ‡ -26500

† Gage height, in feet, at end of month.
‡ Change in contents, in acre-feet.

08143000 LAKE BROWNWOOD NEAR BROWNWOOD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
OCT 24...	1500	600	21.5	170	51	50	10	45	1.5

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
OCT 24...	6.6	140	0	40	87	.2	6.5	314

08143500 PECAN BAYOU AT BROWNWOOD, TX

LOCATION.--Lat 31°43'54", long 98°58'25", Brown County, Hydrologic Unit 12090107, on right bank at Brownwood, 502 ft (153 m) upstream from city dam, 6.3 mi (10.1 km) downstream from Salt Creek, 10 mi (16 km) downstream from Lake Brownwood, and 47.5 mi (76.4 km) upstream from mouth.

DRAINAGE AREA.--1,614 mi^2 (4,180 km^2).

PERIOD OF RECORD.--May 1917 to June 1918, October 1923 to current year.

REVISED RECORDS.--WSP 1312: 1928. WSP 1512: 1924(M), 1926-27, 1928(M), 1930-32, 1935(M), 1936, 1941.

GAGE.--Water-stage recorder. Datum of gage is 1,318.58 ft (401.903 m) National Geodetic Vertical Datum of 1929. See WSP 1922 for history of changes prior to Apr. 2, 1962.

REMARKS.--Records good. Flow regulated by Lake Brownwood (station 08143000). Brown County Water Improvement District No. 1 canal (station 08142500) diverts water from Lake Brownwood 10 mi (16 km) upstream. At end of year, flow from 20.8 mi^2 (53.9 km^2) above this station and below Lake Brownwood was partly controlled by nine floodwater-retarding structures with a combined detention capacity of 4,720 acre-ft (5.82 hm^3). National Weather Service gage-height and rainfall telemeter at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--7 years (water years 1925-28, 1930-32) prior to completion of Lake Brownwood, 251 ft^3/s (7.108 m^3/s), 181,800 acre-ft/yr (224 hm^3/yr); 48 years (water years 1933-80) partially regulated, 118 ft^3/s (3.342 m^3/s), 85,490 acre-ft/yr (105 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,600 ft^3/s (895 m^3/s) Oct. 14, 1930, gage height, 16.92 ft (5.157 m); no flow at times.

Flood of July 3, 1932, probably the greatest, reached a discharge of about 235,000 ft^3/s (6,660 m^3/s) as it entered Lake Brownwood (computed from rate of change in contents in the partially completed lake); data furnished by engineers of Brownwood County Water Improvement District No. 1.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 21.7 ft (6.61 m) in September 1900, from information by Gulf, Colorado, and Santa Fe Railway Co.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,420 ft^3/s (125 m^3/s) May 14 at 2300 hours, gage height, 4.78 ft (1.457 m); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.90	1.9	.00	.00	2.4	7.8	.20	.00
2	.00	.00	.00	.00	.77	.91	.00	.00	1.8	5.3	.00	.01
3	.00	.00	.00	.00	.77	.51	.00	.00	1.4	2.4	.00	1.8
4	.00	.00	.00	.00	.83	.38	.00	.00	.79	.11	.00	.22
5	.00	.00	.00	.00	1.1	.47	.00	.00	.48	.33	.00	.00
6	.00	.00	.00	.00	1.0	.55	.00	.00	.16	1.3	.00	.00
7	.00	.00	.00	.00	1.1	.51	.00	43	.00	1.3	.00	.00
8	.00	.00	.00	.00	2.5	.43	.00	57	3.2	1.3	.00	.20
9	.00	.00	.00	.00	3.3	.57	.00	14	287	.02	.00	14
10	.00	.00	.00	.00	2.6	.98	.00	7.2	38	.00	.00	15
11	.00	.00	.00	.01	2.0	1.6	.00	4.4	21	.00	.00	6.1
12	.00	.00	.00	.00	1.4	1.5	.00	3.7	13	.00	.00	3.4
13	.00	.00	.00	.00	1.1	1.0	.00	5.0	7.9	.00	.00	1.9
14	.00	.00	.00	.00	1.1	.73	.00	850	5.4	.28	.00	1.0
15	.00	.00	.00	.00	1.3	.40	.00	797	4.3	.99	.00	.58
16	.00	.00	.00	.00	1.5	.08	.00	293	1.8	.18	.00	.06
17	.00	.00	.00	.00	1.1	.00	.00	97	.01	.00	.01	.11
18	.00	.00	.00	.00	.77	.00	.00	30	.03	.00	.17	.04
19	.00	.00	.00	.00	.79	.00	.00	18	.00	.00	.02	.00
20	.00	.00	.00	.00	.94	.00	.00	11	.00	.00	.00	.00
21	.00	.00	.00	.01	.88	.00	.00	10	1.6	.00	.01	.00
22	.00	.00	.00	14	.87	.00	.00	7.0	10	.00	.70	.00
23	.00	.00	.00	11	.87	.00	.00	4.6	14	.00	.01	.00
24	.00	.00	.00	5.3	.76	.00	.00	3.2	4.8	.00	.01	.00
25	.00	.00	.00	3.2	.73	.00	.00	2.8	2.5	.00	.00	.00
26	.00	.00	.00	2.2	.64	.00	.04	2.3	3.4	.00	.00	.00
27	.00	.00	.00	1.5	.51	.00	.24	1.9	16	.00	.00	8.4
28	.00	.00	.00	1.1	.59	.00	.36	21	20	1.2	.00	19
29	.00	.00	.00	.98	1.0	.00	.19	9.4	24	3.5	.00	11
30	.00	.00	.00	.99	---	.00	.00	5.5	12	2.7	.00	9.1
31	.00	---	.00	1.0	---	.00	---	3.3	---	2.0	.00	---
TOTAL	.00	.00	.00	41.29	33.72	12.52	.83	2301.30	496.97	30.71	1.13	91.92
MEAN	.000	.000	.000	1.33	1.16	.40	.028	74.2	16.6	.99	.036	3.06
MAX	.00	.00	.00	14	3.3	1.9	.36	850	287	7.8	.70	19
MIN	.00	.00	.00	.00	.51	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	82	67	25	1.6	4560	986	61	2.2	182

CAL YR 1979 TOTAL 9766.89 MEAN 26.8 MAX 1510 MIN .00 AC-FT 19370
WTR YR 1980 TOTAL 3010.39 MEAN 8.23 MAX 850 MIN .00 AC-FT 5970

08143600 PECAN BAYOU NEAR MULLIN, TX

LOCATION.--Lat 31°31'02", long 98°44'25", Mills County, Hydrologic Unit 12090107, on right bank 44 ft (13 m) downstream from bridge on Farm Road 573, 0.6 mi (1.0 km) downstream from Blanket Creek, 5.5 mi (8.8 km) southwest of Mullin, and 10 mi (16 km) upstream from Colorado River.

DRAINAGE AREA.--2,034 mi² (5,268 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,202.93 ft (366.653 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Flow is affected by Lake Brownwood 47 mi (76 km) upstream (see station 08143000). At end of year, flow from 143 mi² (370 km²) above this station and below Lake Brownwood was partly controlled by 40 floodwater-retarding structures with a combined detention capacity of 32,280 acre-ft (39.8 hm³) below the flood-spillway crests.

AVERAGE DISCHARGE.--13 years, 124 ft³/s (3.512 m³/s), 89,840 acre-ft/yr (111 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,700 ft³/s (388 m³/s) Jan. 23, 1968, gage height, 29.26 ft (8.918 m); no flow June 29 to Aug. 5, 1974, and July 7 to Aug. 2, 1978, and July 30 to Sept. 10, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,230 ft³/s (120 m³/s) May 15 at 1500 hours, gage height, 13.16 ft (4.011 m); no flow July 30 to Sept. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.84	4.6	5.6	14	15	8.2	9.3	1.5	18	25	.00	.00
2	.68	4.9	4.7	12	13	6.6	8.5	2.7	15	15	.00	.00
3	.54	4.9	8.5	11	12	5.5	8.6	1.2	14	8.3	.00	.00
4	.42	4.6	10	11	11	5.3	7.4	4.5	13	5.5	.00	.00
5	.40	4.5	8.9	11	10	6.4	6.8	16	12	5.6	.00	.00
6	.34	4.6	8.6	11	10	8.2	7.6	15	11	4.6	.00	.00
7	.24	4.9	7.5	11	10	7.5	7.5	122	10	3.3	.00	.00
8	.18	4.7	6.7	10	18	6.9	6.2	583	11	2.3	.00	.00
9	.87	5.1	6.4	9.4	14	6.2	5.0	114	373	1.7	.00	.00
10	1.7	5.3	6.7	8.8	14	5.5	4.0	47	181	1.3	.00	14
11	2.0	5.3	6.3	8.3	12	5.0	7.6	23	72	1.1	.00	39
12	2.7	5.3	6.3	8.3	12	4.5	11	79	43	.86	.00	22
13	2.7	4.5	7.9	8.3	12	5.1	11	76	31	.69	.00	12
14	2.7	4.7	14	8.0	11	5.8	26	51	26	.63	.00	8.1
15	3.2	8.2	12	7.2	11	6.5	24	2570	20	.60	.00	6.4
16	3.2	7.9	9.0	7.2	11	6.3	14	2110	14	.64	.00	5.0
17	3.0	6.6	7.3	9.4	11	7.7	15	675	13	.74	.00	4.9
18	2.9	6.2	6.4	14	9.7	7.7	14	263	12	.85	.00	4.9
19	4.3	7.9	5.6	13	9.1	6.3	11	125	11	.88	.00	4.5
20	2.1	8.3	5.3	12	9.1	7.9	9.3	74	8.3	.75	.00	3.5
21	1.4	7.7	5.5	21	8.6	8.3	7.5	52	7.2	.81	.00	2.5
22	1.3	10	6.2	39	7.6	8.5	7.5	38	9.4	.73	.00	2.8
23	.93	11	8.8	70	6.7	6.9	7.2	32	12	.53	.00	2.9
24	.77	9.3	24	44	6.0	6.7	7.2	28	18	.33	.00	2.4
25	1.8	7.7	28	26	5.3	6.1	6.8	24	25	.26	.00	3.2
26	2.7	6.1	16	20	4.4	5.7	5.9	20	15	.18	.00	4.0
27	4.2	5.0	13	17	4.1	12	5.3	28	12	.13	.00	14
28	4.5	4.5	21	16	8.1	34	4.7	137	12	.12	.00	21
29	4.5	5.2	51	15	10	41	4.8	96	22	.10	.00	74
30	4.8	6.1	35	15	---	18	2.5	43	30	.06	.00	46
31	4.5	---	20	15	---	12	---	24	---	.00	.00	---
TOTAL	66.41	185.6	382.2	502.9	295.7	288.3	273.2	7474.9	1070.9	83.59	.00	297.10
MEAN	2.14	6.19	12.3	16.2	10.2	9.30	9.11	241	35.7	2.70	.000	9.90
MAX	4.8	11	51	70	18	41	26	2570	373	25	.00	74
MIN	.18	4.5	4.7	7.2	4.1	4.5	2.5	1.2	7.2	.00	.00	.00
AC-FT	132	368	758	998	587	572	542	14830	2120	166	.00	589

CAL YR 1979 TOTAL 15824.44 MEAN 43.4 MAX 2170 MIN .18 AC-FT 31390
WTR YR 1980 TOTAL 10920.80 MEAN 29.8 MAX 2570 MIN .00 AC-FT 21660

08143600 PECAN BAYOU NEAR MULLIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to current year.
WATER TEMPERATURES: October 1967 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (1967-70, 1972-80): Maximum daily, 2,230 micromhos May 14, 1978; minimum daily, 203 micromhos Sept. 18, 1974.
WATER TEMPERATURES (1967-70, 1972-75): Maximum daily, 32.0°C on several days during summer months; minimum daily, 1.0°C Jan. 15, 1975.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,170 micromhos Dec. 9; minimum daily, 264 micromhos May 16.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
NOV 22...	1520	9.8	2020	12.0	340	130	94	25	290
JAN 10...	0900	8.5	1530	9.0	250	110	75	16	230
FEB 20...	1120	9.3	1340	11.0	260	110	78	17	170
MAR 01...	1820	9.4	1630	9.0	300	120	87	20	170
APR 02...	--	8.4	1830	21.0	310	100	89	22	230
MAY 13...	1120	104	616	24.0	180	49	54	11	52
JUN 25...	0940	27	546	29.0	170	30	53	9.1	39

DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
NOV 22...	6.9	16	250	0	110	470	.4	1.3	1130
JAN 10...	6.3	11	180	0	130	350	.3	3.3	904
FEB 20...	4.5	11	190	0	91	270	.3	.8	732
MAR 01...	4.3	11	220	0	110	280	.3	.7	787
APR 02...	5.7	14	260	0	110	370	.5	2.8	966
MAY 13...	1.7	7.4	160	0	51	80	.4	9.9	348
JUN 25...	1.3	7.9	170	0	40	64	.2	8.0	305

08143600 PECAN BAYOU NEAR MULLIN, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	66.41	955	528	95	160	28	73	13	250
NOV.	1979	185.6	1880	1060	530	410	206	140	68	360
DEC.	1979	382.2	1610	903	934	330	341	120	122	360
JAN.	1980	502.9	1230	685	930	220	301	92	125	290
FEB.	1980	295.7	1260	700	559	230	180	94	75	300
MAR.	1980	288.3	1540	862	671	300	235	110	88	340
APR.	1980	273.2	1570	880	649	310	231	120	85	340
MAY	1980	7474.9	376	206	4160	49	986	29	594	110
JUNE	1980	1070.9	977	543	1570	170	499	73	212	240
JULY	1980	83.59	1210	671	151	210	48	91	20	300
AUG.	1980	0.00	*	*	0.00	*	0.00	*	0.00	*
SEPT	1980	297.10	1450	808	648	280	221	110	86	330
TOTAL		10920.80	**	**	10900	**	3270	**	1490	**
WTD. AVG.		30	667	369	**	110	**	50	**	170

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	620	1480	2120	1390	1580	1630	1850	1640	930	1100		---
2	626	1530	2160	1400	1510	1450	1830	1670	940	1150		---
3	635	1590	2100	1440	1430	1510	1820	1700	948	1200		---
4	640	1640	2070	1480	1300	1500	1800	1750	990	1220		---
5	650	1690	2080	1590	1130	1490	1780	1720	1040	1240		---
6	657	1670	2150	1580	1150	1370	1740	1760	1080	1270		---
7	658	1700	2140	1600	1180	1410	1760	756	1110	1290		---
8	660	1710	2160	1580	826	1440	1840	567	1150	1320		---
9	670	1480	2170	1590	984	1470	1840	700	1630	1310		---
10	690	1710	2150	1480	1050	1490	1880	670	650	1330		1560
11	700	1730	2140	1300	1100	1500	1920	650	412	1340		1430
12	720	1730	2160	1280	1180	1520	1850	630	405	1360		1600
13	718	1720	2130	1240	1200	1500	1870	616	399	1370		1780
14	735	1750	2040	1210	1230	1490	1680	542	413	1390		1700
15	755	1770	1930	1230	1260	1480	1450	288	411	1400		1590
16	770	1800	1860	1260	1280	1470	1300	264	417	1410		1560
17	800	1880	1780	1270	1300	1460	1220	310	425	1400		1510
18	830	1930	1640	1280	1320	1480	1130	355	430	1420		1550
19	890	1960	1600	1290	1340	1500	1210	420	441	1430		1600
20	912	2000	1580	1310	1360	1470	1290	460	450	1440		1640
21	925	2030	1590	850	1400	1450	1350	494	458	1420		1680
22	934	2020	1570	681	1390	1440	1410	510	465	1440		1720
23	951	2020	1530	1170	1370	1570	1430	553	471	1450		1750
24	950	2070	1060	900	1360	1650	1510	600	520	1460		1690
25	995	2100	1000	1000	1380	1670	1530	640	554	1470		1640
26	1050	2130	1390	1180	1380	1680	1560	663	628	1480		1620
27	1100	2150	1400	1360	1370	1520	1590	704	668	1470		1520
28	1150	2130	1290	1470	1370	1460	1610	790	768	1480		1450
29	1200	2140	1570	1510	1430	1650	1620	880	906	1480		1310
30	1290	2130	1340	1560	---	1740	1650	927	950	1490		1250
31	1450	---	1370	1650	---	1860	---	950	---	---		---
MEAN	849	1850	1780	1330	1280	1520	1610	812	702	1370		1580

08143600 PECAN BAYOU NEAR MULLIN, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	14.5	5.0	---	---	9.0	---	20.5	---	30.0		---
2	24.0	---	---	10.0	---	7.0	23.0	20.0	---	---		---
3	---	---	---	---	10.0	19.0	---	20.5	27.0	---		---
4	---	15.0	8.0	9.0	---	---	---	---	---	32.0		---
5	---	16.0	---	7.0	9.0	12.5	---	20.0	---	---		---
6	23.0	---	8.0	---	---	---	22.0	21.0	---	---		---
7	---	14.5	---	---	---	---	23.0	24.0	30.0	29.0		---
8	22.0	17.0	9.0	---	8.0	---	---	20.0	---	30.0		---
9	21.0	14.5	---	8.0	6.5	---	18.0	21.0	26.0	---		---
10	---	12.5	---	11.0	---	16.0	21.0	---	---	30.0		27.0
11	---	---	13.0	9.0	---	14.5	22.0	---	25.0	---		28.0
12	---	---	---	---	8.0	---	14.5	---	---	30.0		---
13	20.0	10.5	7.0	---	10.0	17.0	---	---	27.0	---		26.0
14	---	---	8.0	9.0	13.0	15.0	15.0	27.0	27.0	---		25.0
15	21.0	10.0	10.0	---	---	16.0	---	18.0	27.0	34.0		30.0
16	---	---	---	12.0	---	---	20.0	19.0	28.5	---		---
17	---	---	---	10.0	---	15.0	---	---	---	---		27.0
18	---	---	6.5	13.0	10.0	15.0	19.5	---	27.0	33.0		---
19	22.0	---	---	---	13.0	---	21.0	---	30.0	33.0		---
20	23.0	---	9.0	---	14.5	18.0	---	---	---	34.0		25.0
21	---	13.0	9.0	---	15.0	---	22.0	28.0	29.0	30.0		---
22	20.0	12.0	---	9.0	---	---	23.0	25.0	---	30.0		---
23	15.0	---	---	10.0	---	---	24.0	25.0	29.0	---		27.0
24	---	---	---	---	---	18.0	24.0	---	---	28.5		---
25	17.0	---	---	---	14.0	---	---	---	30.0	27.0		25.0
26	---	12.5	---	---	---	---	---	29.0	32.0	30.0		24.0
27	---	---	---	---	14.0	15.0	---	20.0	29.0	33.0		28.0
28	---	---	11.0	7.0	16.0	19.0	---	---	29.0	32.0		---
29	19.0	8.0	9.0	7.0	12.0	16.0	19.0	28.0	32.0	32.0		22.0
30	18.0	7.0	10.0	7.0	---	---	20.0	28.0	---	---		---
31	15.0	---	---	5.0	---	17.0	---	---	---	---		---
MEAN	20.0	12.5	9.0	9.0	11.5	15.0	20.5	23.0	28.5	31.0		26.0

08144000 NOYES CANAL AT MENARD, TX

LOCATION.--Lat 30°54'57", long 99°47'02", Menard County, Hydrologic Unit 12090109, on right bank at intersection of Canal and Gay Streets in Menard and 4.7 mi (7.6 km) downstream from headgates.

PERIOD OF RECORD.--March 1924 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,878.06 ft (572.433 m) National Geodetic Vertical Datum of 1929. Prior to July 23, 1940, nonrecording gage at site 2,000 ft (610 m) upstream at datum 4.99 ft (1.521 m) higher.

REMARKS.--Records good. Discharge represents flow diverted from San Saba River; local runoff between diversion point and gage excluded. Canal diverts water from right bank of San Saba River 4.7 mi (7.6 km) upstream from Menard for irrigation near Menard. First diversion was about 1890. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--56 years (water-years 1925-80), 13.5 ft^3/s (0.382 m^3/s), 9,780 acre-ft/yr (12.1 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge (exclusive of times canal was submerged by floodwaters of San Saba River, or when flow was affected by local runoff between point of diversion and station), 43 ft^3/s (1.22 m^3/s) Apr. 29, 30, 1928; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.3	17	16	20	19	18	16	19	15	13	16	16
2	9.3	17	17	20	18	18	17	20	15	13	15	16
3	13	18	17	20	18	19	18	16	15	13	16	16
4	13	17	17	20	18	19	17	20	15	13	15	15
5	19	17	17	20	18	19	17	20	15	13	15	15
6	18	17	17	20	18	19	17	20	10	13	16	15
7	18	17	18	20	18	19	17	20	15	13	16	18
8	18	17	18	20	18	19	17	20	15	13	16	22
9	18	16	18	20	18	19	17	19	16	13	16	.85
10	17	16	18	20	18	18	17	19	15	6.6	16	.05
11	17	16	18	20	18	18	17	19	15	15	17	.01
12	18	15	19	20	17	17	18	20	15	16	17	.00
13	19	15	18	20	17	17	18	21	15	16	9.3	.00
14	19	14	18	20	17	17	18	20	15	16	17	.00
15	19	13	18	20	18	16	18	20	14	17	17	.00
16	20	13	18	20	18	16	13	20	14	17	16	.00
17	20	13	19	20	18	16	18	19	14	17	16	.00
18	20	9.4	19	20	18	16	18	19	14	17	17	.00
19	19	6.2	19	20	18	15	18	18	14	17	17	.00
20	19	6.7	19	20	17	15	18	18	14	17	16	.00
21	20	8.5	19	20	18	15	18	18	15	17	16	.00
22	21	7.2	19	21	17	16	18	18	17	17	16	.00
23	21	5.7	19	20	18	15	18	18	12	17	16	.00
24	21	9.7	19	20	18	15	18	17	15	17	16	.00
25	19	17	19	19	18	18	18	18	14	17	15	.45
26	19	17	20	19	18	18	18	16	14	16	15	.06
27	19	18	20	19	18	18	18	16	14	8.0	15	.39
28	19	18	20	19	18	18	19	16	14	17	15	.41
29	19	18	20	19	19	18	18	16	13	16	16	.11
30	18	16	20	19	---	18	19	16	13	16	16	.01
31	18	---	20	19	---	17	---	15	---	16	16	---
TOTAL	555.6	425.4	573	614	519	536	526	571	431	462.6	488.3	135.34
MEAN	17.9	14.2	18.5	19.8	17.9	17.3	17.5	18.4	14.4	14.9	15.8	4.51
MAX	21	18	20	21	19	19	19	21	17	17	17	22
MIN	8.3	5.7	16	19	17	15	13	15	10	6.6	9.3	.00
AC-FT	1100	844	1140	1220	1030	1060	1040	1130	855	918	969	268

CAL YR 1979 TOTAL 5673.40 MEAN 15.5 MAX 23 MIN 5.7 AC-FT 11250
WTR YR 1980 TOTAL 5837.24 MEAN 15.9 MAX 22 MIN .00 AC-FT 11580

08144500 SAN SABA RIVER AT MENARD, TX

LOCATION.--Lat 30°55'08", long 99°47'07", Menard County, Hydrologic Unit 12090109, on downstream side of bridge on U.S. Highway 83 in Menard, 1.1 mi (1.8 km) downstream from Las Moras Creek, 1.9 mi (3.1 km) upstream from Volkmann Draw, and 110.4 mi (177.6 km) upstream from mouth.

DRAINAGE AREA.--1,151 mi² (2,981 km²).

PERIOD OF RECORD.--September 1915 to current year.

REVISED RECORDS.--WSP 568: Drainage area. WSP 1512: 1918-20, 1922-25, 1926(M), 1927-32, 1934(M), 1936, 1938(M).

GAGE.--Water-stage recorder. Datum of gage is 1,863.05 ft (567.858 m) National Geodetic Vertical Datum of 1929. Sept. 14, 1915, to Mar. 12, 1924, nonrecording gage at site 635 ft (194 m) downstream at datum 2.20 ft (0.671 m) lower. Mar. 13, 1924, to Feb. 21, 1939, nonrecording gage at site 1,000 ft (305 m) upstream at datum 2.00 ft (0.610 m) higher. Feb. 22, 1939, to Jan. 25, 1940, nonrecording gage at present site and datum. Jan. 26, 1940, to Sept. 19, 1957, water-stage recorder at site 240 ft (73 m) to right at present datum. Feb. 8, 1962, to Jan. 22, 1963, nonrecording gage at site 600 ft (180 m) downstream at present datum.

REMARKS.--Records good. Since about 1890, low flow during irrigation season regulated by diversions to Noyes Canal 4.5 mi (7.2 km) upstream and diversions by pumping at several locations upstream. Records of the Texas Department of Water Resources show that permits have been granted to irrigate 3,338 acres (1,400 hm²) above station. See record of Noyes Canal on preceding page. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--65 years, 65.5 ft³/s (1.855 m³/s), 47,450 acre-ft/yr (58.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 130,000 ft³/s (3,680 m³/s) July 23, 1938, gage height, 22.2 ft (6.77 m), present site and datum, from floodmark, from rating curve extended above 56,000 ft³/s (1,590 m³/s) on basis of slope-area measurement of peak flow; no flow at times as result of upstream diversion to Noyes Canal (station 08144000).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1880, 23.3 ft (7.10 m) June 6, 1899, present site and datum, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 670 ft³/s (19.0 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Sept. 8	1345	*90,500	2,560	21.00	6.401	Sept. 25	1830	3,620	103	8.31	2.533
Sept. 9	1700	6,160	174	9.77	2.978	Sept. 28	1715	1,410	39.9	6.70	2.042
Sept. 10	0815	4,130	117	8.66	2.640						

Minimum daily discharge, 5.0 ft³/s (0.14 m³/s) July 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	27	33	34	29	35	29	26	27	19	7.8	11
2	22	28	35	33	30	34	30	28	26	19	7.7	11
3	22	31	37	32	30	35	28	28	25	18	7.6	9.9
4	21	30	39	32	29	36	26	32	25	17	7.6	9.8
5	19	31	36	31	29	36	24	34	24	17	7.4	9.7
6	17	32	33	30	29	35	24	30	23	16	7.6	9.8
7	16	30	30	30	29	37	25	35	23	15	7.6	11
8	17	32	32	30	37	37	23	42	23	15	7.6	20900
9	18	33	35	30	40	37	23	37	32	15	7.8	2930
10	17	33	37	32	35	38	23	32	31	14	9.3	1620
11	14	34	40	32	31	38	24	30	31	12	11	373
12	16	34	52	32	30	41	24	30	31	8.8	11	162
13	23	36	46	33	30	37	28	43	29	7.7	13	105
14	26	38	41	33	31	40	30	51	26	6.9	13	85
15	27	38	38	34	31	34	28	43	24	6.1	13	75
16	28	37	36	34	33	35	27	43	23	5.3	13	70
17	28	38	36	35	33	35	26	37	22	5.3	12	66
18	24	38	34	34	33	35	25	34	20	5.3	12	65
19	17	52	33	35	33	35	25	36	19	5.2	12	64
20	16	54	35	34	33	35	25	34	18	5.1	12	62
21	17	45	36	34	32	35	25	37	20	5.1	11	60
22	19	40	40	39	32	34	24	34	34	5.0	11	60
23	20	35	50	37	33	36	25	32	37	5.7	11	59
24	23	33	45	33	35	34	25	31	33	5.7	10	58
25	23	30	38	29	35	29	24	31	27	5.6	10	694
26	24	28	34	29	36	30	22	39	23	5.7	10	546
27	25	33	37	29	36	33	22	32	22	5.8	10	245
28	25	33	40	29	36	36	23	30	21	7.3	10	502
29	26	32	45	30	38	33	23	29	19	7.7	10	748
30	26	33	38	31	---	29	22	29	19	7.9	10	395
31	26	---	34	30	---	29	---	28	---	7.6	11	---
TOTAL	668	1048	1175	1000	948	1083	752	1057	757	301.8	314.0	30016.2
MEAN	21.5	34.9	37.9	32.3	32.7	34.9	25.1	34.1	25.2	9.74	10.1	1001
MAX	28	54	52	39	40	41	30	51	37	19	13	20900
MIN	14	27	30	29	29	29	22	26	18	5.0	7.4	9.7
AC-FT	1320	2080	2330	1980	1880	2150	1490	2100	1500	599	623	59540

CAL YR 1979 TOTAL 15495.0 MEAN 42.5 MAX 876 MIN 2.0 AC-FT 30730
WTR YR 1980 TOTAL 39120.0 MEAN 107 MAX 20900 MIN 5.0 AC-FT 77590

08144600 SAN SABA RIVER NEAR BRADY, TX

LOCATION.--Lat 31°00'11", long 99°16'07", McCulloch County, Hydrologic Unit 12090109, on right bank at downstream side of bridge on U.S. Highways 87 and 377, 0.4 mi (0.6 km) upstream from Hudson Branch, and 8.4 mi (13.5 km) southeast of Brady.

DRAINAGE AREA.--1,633 mi² (4,229 km²), of which 6.60 mi² (17.09 km²) probably is noncontributing.

PERIOD OF RECORD.--July 1979 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,530.98 ft (466.643 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Diversions above station for irrigation (see station 08144000). Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66,000 ft³/s (1,870 m³/s) Sept. 8, 1980, gage height, 25.50 ft (7.772 m); minimum, 0.24 ft³/s (0.007 m³/s) Aug. 1, 1980.

EXTREMS OUTSIDE PERIOD OF RECORD.--Highest stage since June 1899, 33.8 ft (10.30 m) July 23, 1938, from high-water mark on left bank 150 ft (46 m) upstream from present site.

EXTREMES FOR PERIOD JULY TO SEPTEMBER 1979.--Maximum discharge, 2,470 ft³/s (70.0 m³/s) July 19 at 0800 hours, gage height, 6.18 ft (1.884 m), no other peak above base of 1,000 ft³/s (28.3 m³/s); minimum, 11 ft³/s (0.31 m³/s) Sept. 30.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Sept. 8	2100	*66,000	1,870	25.50	7.772	Sept. 25	1830	3,380	95.7	6.94	2.115
Sept. 9	0830	42,700	1,210	19.81	6.038	Sept. 26	0715	2,220	62.9	5.95	1.814
Sept. 10	0215	4,780	135	7.83	2.387	Sept. 29	0830	1,380	39.1	5.03	1.533

Minimum discharge, 0.24 ft³/s (0.007 m³/s) Aug. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, JULY TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1										28	46	41
2										28	82	43
3										27	74	45
4										29	69	45
5										25	62	40
6										20	54	38
7										21	48	43
8										26	54	43
9										23	56	37
10										27	64	38
11										28	104	37
12										26	109	35
13										28	74	31
14										28	65	28
15										27	64	26
16										19	58	28
17										18	56	30
18										19	50	24
19										942	54	25
20										444	50	25
21										256	46	29
22										133	46	28
23										99	43	26
24										89	48	26
25										71	54	26
26										67	48	24
27										64	45	23
28										62	45	27
29										54	43	17
30										48	43	12
31										45	40	---
TOTAL										2821	1794	940
MEAN										91.0	57.9	31.3
MAX										942	109	45
MIN										18	40	12
AC-FT										5600	3560	1860

WTR YR 1979 TOTAL - MEAN - MAX - MIN - AC-FT -

08144600 SAN SABA RIVER NEAR BRADY, TX--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	20	37	52	50	39	44	34	48	23	.31	4.8
2	15	19	37	52	50	35	43	40	48	20	.41	4.8
3	18	24	37	52	46	37	40	36	46	18	1.7	5.5
4	21	24	39	52	48	42	40	39	46	17	1.4	4.9
5	21	23	36	52	48	42	37	40	46	13	1.2	4.5
6	18	24	33	54	48	46	33	53	42	14	.93	3.9
7	14	28	36	53	48	44	33	55	40	14	.89	5.5
8	11	32	35	52	48	41	29	63	43	16	.73	23900
9	11	33	38	52	48	40	29	68	43	15	.63	15200
10	9.1	29	40	50	48	40	26	65	57	13	.51	2670
11	13	32	44	52	48	41	30	60	49	12	.78	960
12	16	36	43	52	48	45	27	58	52	10	.95	386
13	17	35	48	50	48	43	32	64	50	8.1	.95	231
14	14	33	48	50	48	41	42	74	41	7.5	1.1	168
15	14	31	50	50	48	37	44	93	39	4.7	4.6	119
16	16	32	51	48	46	37	40	112	36	3.4	6.0	127
17	25	36	46	48	43	36	34	75	33	2.9	5.6	113
18	34	36	45	48	45	34	32	65	28	2.2	6.2	99
19	31	44	46	50	48	32	33	62	22	1.4	6.4	91
20	27	47	47	50	48	32	28	52	25	1.1	5.7	89
21	26	44	49	56	48	30	30	88	24	.89	5.3	83
22	26	39	53	60	46	32	34	67	53	.82	5.4	76
23	13	42	69	60	45	34	33	57	64	.82	5.4	73
24	14	43	64	58	45	33	33	50	41	.66	4.4	73
25	15	47	56	52	43	37	33	55	40	.66	3.5	505
26	15	46	55	50	41	39	33	57	37	.66	2.8	961
27	17	50	55	43	43	45	33	60	29	.59	2.1	721
28	19	48	60	41	43	42	33	62	24	.81	2.1	537
29	19	44	65	41	44	40	34	57	24	.55	4.3	900
30	20	39	59	46	---	40	33	53	23	.43	4.9	812
31	23	---	57	50	---	42	---	50	---	.33	4.8	---
TOTAL	564.1	1060	1478	1576	1350	1198	1025	1864	1193	223.52	91.99	48927.9
MEAN	18.2	35.3	47.7	50.8	46.6	38.6	34.2	60.1	39.8	7.21	2.97	1631
MAX	34	50	69	60	50	46	44	112	64	23	6.4	23900
MIN	9.1	19	33	41	41	30	26	34	22	.33	.31	3.9
AC-FT	1120	2100	2930	3130	2680	2380	2030	3700	2370	443	182	97050

CAL YR 1979 TOTAL - MEAN - MAX - MIN - AC-FT -
WTR YR 1980 TOTAL 60551.51 MEAN 165 MAX 23900 MIN .31 AC-FT 120100

08144800 BRADY CREEK NEAR EDEN, TX

LOCATION.--Lat 31°11'05", long 99°50'29", Concho County, Hydrologic Unit 12090110, on right bank at upstream side of bridge on U.S. Highway 83, 0.8 mi (1.3 km) downstream from Fitzgerald Creek, 2.2 mi (3.5 km) south of Eden, 2.4 mi (3.9 km) upstream from Hardin Branch, and 69.3 mi (111.5 km) upstream from mouth.

DRAINAGE AREA.--97 mi² (251 km²).

PERIOD OF RECORD.--April 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,000.99 ft (609.902 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow is affected at times by discharge from the flood-detention pools of five floodwater-retarding structures with combined detention capacity of 22,190 acre-ft (27.4 hm³). These structures control runoff from 65.0 mi² (168.4 km²) above this station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--18 years, 1.12 ft³/s (0.0317 m³/s), 811 acre-ft/yr (1.00 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,110 ft³/s (145 m³/s) Apr. 28, 1966, gage height, 7.08 ft (2.158 m); no flow for many days most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1884, 15.8 ft (4.82 m) in July 1938, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,350 ft³/s (38.2 m³/s) Sept. 9 at 1300 hours, gage height, 4.58 ft (1.396 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.04	.09	.17	.22	.22	.17	.28	.17	.24	.02	.00
2	.04	.06	.10	.16	.20	.22	.17	.32	.17	.22	.00	.00
3	.05	.07	.11	.17	.20	.20	.20	.37	.15	.22	.00	.00
4	.05	.08	.11	.15	.22	.22	.20	.60	.15	.22	.00	.00
5	.05	.08	.20	.15	.22	.20	.20	.62	.15	.17	.00	.00
6	.05	.06	.15	.15	.22	.20	.19	.53	.15	.15	.00	.00
7	.04	.06	.15	.13	.25	.20	.17	.41	.15	.15	.00	.00
8	.04	.06	.18	.22	.37	.20	.16	1.3	1.2	.15	.00	5.3
9	.04	.08	.20	.31	.39	.21	.13	.59	16	.14	.00	205
10	.04	.08	.20	.31	.24	.23	.13	.41	.95	.11	.00	32
11	.05	.08	.20	.24	.25	.19	.15	.38	.53	.11	.03	1.9
12	.08	.07	.36	.18	.25	.29	.23	.40	.50	.11	.05	.46
13	.08	.07	.42	.24	.25	.17	.40	.71	.40	.11	.06	.20
14	.08	.07	.36	.14	.30	.21	.30	90	.29	.09	.03	.15
15	.13	.07	.35	.17	.31	.22	.25	95	.29	.09	.02	.11
16	.13	.08	.25	.11	.29	.22	.24	26	.29	.08	.01	.09
17	.13	.10	.25	.11	.24	.27	.20	1.5	.25	.07	.00	.07
18	.12	.13	.25	.11	.32	.25	.22	.39	.25	.06	.00	.07
19	.08	.11	.25	.10	.31	.24	.22	.31	.28	.06	.00	.06
20	.08	.11	.25	.13	.23	.26	.22	.28	.25	.06	.00	.06
21	.08	.10	.23	.13	.25	.20	.22	.39	.28	.07	.00	.05
22	.06	.08	.28	.79	.25	.20	.22	.29	13	.07	.00	.04
23	.04	.08	.39	.42	.25	.20	.22	.25	.99	.08	.00	.04
24	.04	.05	.36	.27	.27	.11	.24	.23	.53	.07	.00	.05
25	.05	.07	.25	.18	.29	.13	.17	.20	.46	.06	.00	.17
26	.06	.09	.25	.17	.25	.15	.13	.17	.41	.05	.00	.41
27	.06	.09	.22	.17	.25	.37	.14	.16	.36	.04	.00	1.5
28	.05	.11	.23	.20	.25	.37	.17	.17	.32	.03	.00	1.9
29	.06	.09	.25	.20	.25	.22	.17	.17	.29	.03	.00	2.4
30	.07	.08	.18	.21	---	.17	.17	.17	.29	.02	.00	1.2
31	.04	---	.17	.25	---	.17	---	.17	---	.02	.00	---
TOTAL	1.99	2.40	7.24	6.44	7.59	6.71	6.00	222.77	39.50	3.15	.22	253.23
MEAN	.064	.080	.23	.21	.26	.22	.20	7.19	1.32	.10	.007	8.44
MAX	.13	.13	.42	.79	.39	.37	.40	95	16	.24	.06	205
MIN	.02	.04	.09	.10	.20	.11	.13	.16	.15	.02	.00	.00
AC-FT	3.9	4.8	14	13	15	13	12	442	78	6.2	.4	502

CAL YR 1979 TOTAL 130.95 MEAN .36 MAX 3.8 MIN .02 AC-FT 260
WTR YR 1980 TOTAL 557.24 MEAN 1.52 MAX 205 MIN .00 AC-FT 1110

08144900 BRADY CREEK RESERVOIR NEAR BRADY, TX

LOCATION.--Lat 31°08'17", long 99°23'07", McCulloch County, Hydrologic Unit 12090110, at mouth of Bear Creek on Brady Creek, 280 ft (85 m) upstream from Farm Road 3022 over Brady Creek Dam, 3.0 mi (4.8 km) west of Brady, and 34.1 mi (54.9 km) upstream from mouth.

DRAINAGE AREA.--513 mi^2 (1,329 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The reservoir is formed by a compacted earthfill dam 8,400 ft (2,560 m) long. The dam was completed and storage began in May 1963. The dam was built by the city of Brady in cooperation with the Soil Conservation Service and the Farmers Home Administration for flood control, municipal, and industrial water supply. The spillway is a cut channel through natural ground 1,000 ft (305 m) wide located at right end of dam. The top of conservation pool is an uncontrolled concrete drop-inlet structure that discharges through a 7.0- by 7.0-foot (2.1 by 2.1 m) concrete box conduit and is designed to discharge 4,000 ft^3/s (113 m^3/s) at a 19.4-foot (5.9 m) head. The gated outlet is a 36-inch (914 mm) pipe that extends through the embankment and is equipped with three sluice gates for controlled releases downstream. Flow into reservoir is affected at times by discharge from the flood-detention pools of 35 floodwater-retarding structures with a combined detention capacity of 82,180 acre-ft (101 hm^3). These structures were built during the period February 1955 to July 1962 and control runoff from 263 mi^2 (681 km^2) in the Brady Creek watershed above this station. The capacity curve is based on Geological Survey topographic map but was not adjusted for borrow. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	1,783.0	-
Crest of spillway	1,762.4	90,310
Crest of spillway (top of conservation pool)	1,743.0	30,430
Lowest gated outlet (invert)	1,712.0	1,320

COOPERATION.--Records furnished by the city of Brady show no diversions during year for municipal or industrial use. Capacity curve was furnished by the city of Brady.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 40,880 acre-ft (50.4 hm^3) Sept. 24, 1971, elevation, 1,747.70 ft (532.669 m); minimum since first appreciable storage, 1,030 acre-ft (1.27 hm^3) Sept. 18, 1964, elevation, 1,710.4 ft (521.33 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 20,500 acre-ft (25.3 hm^3) Sept. 30, elevation, 1,737.44 ft (529.572 m); minimum, 15,110 acre-ft (18.6 hm^3) Sept. 6, elevation, 1,733.63 ft (528.410 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

1,733.0	14,320
1,735.0	16,910
1,738.0	21,370

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19150	18240	17710	17800	17690	17500	17050	16540	17320	17590	16280	15290
2	19120	18220	17700	17810	17690	17470	17070	16520	17290	17530	16250	15270
3	19070	18190	17700	17780	17690	17450	17020	16520	17250	17490	16180	15240
4	19020	18180	17690	17770	17670	17450	16990	16560	17220	17430	16150	15200
5	18980	18160	17700	17770	17670	17420	16970	16550	17190	17380	16090	15180
6	18960	18140	17670	17770	17660	17400	16970	16550	17160	17330	16060	15160
7	18920	18110	17660	17740	17690	17420	16940	16590	17140	17290	16020	15330
8	18890	18110	17640	17740	17710	17400	16880	16670	17230	17250	15990	16600
9	18830	18080	17640	17730	17730	17400	16870	16670	17840	17210	15970	17970
10	18800	18050	17660	17740	17700	17390	16830	16660	17980	17180	15910	19170
11	18780	18020	17660	17710	17710	17420	16830	16660	18000	17140	15940	19320
12	18770	18010	17730	17700	17700	17400	16870	16670	17980	17090	15930	19360
13	18710	18000	17730	17700	17700	17360	16880	16660	17970	17050	15900	19360
14	18690	17980	17710	17700	17700	17330	16870	16640	17940	16980	15860	19380
15	18690	17970	17710	17700	17700	17330	16840	17150	17900	16940	15830	19380
16	18680	17950	17690	17700	17690	17330	16830	17420	17870	16900	15810	19360
17	18660	17980	17670	17690	17690	17290	16800	17490	17840	16840	15770	19350
18	18630	17970	17660	17670	17690	17260	16790	17520	17810	16800	15730	19330
19	18620	17980	17670	17700	17690	17250	16780	17500	17780	16760	15690	19300
20	18590	18040	17660	17700	17690	17230	16760	17520	17770	16720	15650	19270
21	18560	17940	17690	17710	17660	17210	16740	17560	17730	16700	15620	19230
22	18510	17910	17690	17810	17660	17180	16710	17530	17770	16660	15590	19200
23	18480	17900	17800	17780	17640	17160	16700	17520	17780	16630	15570	19170
24	18450	17870	17760	17780	17630	17140	16700	17500	17810	16580	15540	19150
25	18420	17850	17760	17770	17620	17120	16670	17520	17800	16550	15520	19420
26	18390	17830	17740	17760	17590	17110	16590	17470	17780	16520	15480	19720
27	18380	17810	17740	17730	17590	17160	16580	17470	17760	16500	15440	19930
28	18360	17780	17840	17730	17590	17150	16560	17450	17710	16440	15440	20280
29	18320	17760	17830	17730	17570	17120	16520	17420	17670	16420	15400	20420
30	18320	17730	17810	17730	---	17110	16520	17390	17620	16380	15380	20500
31	18260	---	17810	17700	---	17070	---	17360	---	16340	15330	---
MAX	19150	18240	17840	17810	17730	17500	17070	17560	18000	17590	16280	20500
MIN	18260	17730	17640	17670	17570	17070	16520	16520	17140	16340	15330	15160
(†)	1735.96	1735.58	1735.64	1735.56	1735.47	1735.11	1734.71	1735.32	1735.50	1734.57	1733.80	1737.44
(‡)	-920	-530	+80	-110	-130	-500	-550	+840	+260	-1280	-1010	+5170

CAL YR 1979 MAX 23050 MIN 17640 ‡ -4350
WTR YR 1980 MAX 20500 MIN 15160 ‡ +1320

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

08144900 BRADY CREEK RESERVOIR NEAR BRADY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
FEB									
19...	1105	1730	9.0	320	200	65	39	220	5.3

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
FEB								
19...	12	150	0	150	360	.2	8.8	929

08145000 BRADY CREEK AT BRADY, TX

LOCATION.--Lat 31°08'17", long 99°20'05", McCulloch County, Hydrologic Unit 12090110, on left bank just upstream from bridge on U.S. Highway 377 on North Bridge Street in Brady, 0.4 mi (0.6 km) downstream from Live Oak Creek, and 29.5 mi (47.5 km) upstream from mouth.

DRAINAGE AREA.--575 mi² (1,489 km²).

PERIOD OF RECORD.--May 1939 to current year.

REVISED RECORDS.--WSP 1512: 1941(M), 1951(M).

GAGE.--Water-stage recorder. Datum of gage is 1,646.50 ft (501.853 m) National Geodetic Vertical Datum of 1929. Prior to July 9, 1940, nonrecording gage at site 3,600 ft (1,100 m) upstream at datum 8.24 ft (2.512 m) higher.

REMARKS.--Records good. The city of Brady, which obtains its water supply from ground-water sources, reported that 376 acre-ft (464,000 m³) of sewage effluent was returned to Brady Creek downstream from the gage during the current year. Since May 22, 1962, flow largely controlled by Brady Creek Reservoir (station 08144900). At end of year, flow from 24.2 mi² (62.7 km²) above this station and below Brady Creek Reservoir was partly controlled by six floodwater-retarding structures with a combined capacity of 6,440 acre-ft (7.94 hm³) below flood-spillway crests. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--23 years (water years 1940-62) prior to completion of Brady Creek Reservoir, 25.2 ft³/s (0.714 m³/s), 18,260 acre-ft/yr (22.5 hm³/yr); 18 years (water years 1963-80) regulated, 11.0 ft³/s (0.312 m³/s), 7,970 acre-ft/yr (9.83 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,100 ft³/s (1,110 m³/s) Sept. 10, 1952, gage height, 24.80 ft (7.559 m); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1882, 29.1 ft (8.87 m) July 23, 1938, present site and datum, discharge at site 5 mi (8 km) downstream, 86,000 ft³/s (2,440 m³/s), by slope-area measurement. Flood of Oct. 6, 1930 (second highest since 1882), reached a stage of 25.9 ft (7.89 m), discharge 50,300 ft³/s (1,420 m³/s), present site and datum, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 34 ft³/s (0.96 m³/s) Sept. 28 at 0900 hours, gage height, 5.39 ft (1.643 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.07	.05	.01	.20	.04	.00	.00	.00
2	.00	.00	.00	.00	.12	.05	.01	.21	.04	.00	.00	.00
3	.00	.00	.00	.00	.14	.04	.01	.13	.02	.00	.00	.00
4	.00	.00	.00	.00	.16	.01	.01	.56	.02	.00	.00	.00
5	.00	.00	.00	.00	.18	.02	.01	.67	.02	.00	.00	.00
6	.00	.00	.00	.01	.18	.05	.02	.64	.01	.00	.00	.00
7	.00	.00	.00	.01	.20	.05	.05	1.1	.00	.00	.00	.00
8	.00	.00	.00	.00	.32	.05	.04	2.2	.02	.00	.00	6.0
9	.00	.00	.00	.00	.37	.05	.04	.07	1.0	.00	.00	2.0
10	.00	.00	.00	.00	.33	.04	.04	.06	.05	.00	.00	.21
11	.00	.00	.00	.00	.30	.04	.04	.07	.04	.00	.00	.05
12	.00	.00	.00	.00	.29	.04	.10	.06	.04	.00	.00	.03
13	.00	.00	.00	.00	.28	.04	.55	.11	.03	.00	.00	.02
14	.00	.00	.00	.00	.28	.04	.06	.02	.02	.00	.00	.01
15	.00	.00	.00	.00	.28	.04	.04	3.1	.01	.00	.00	.00
16	.00	.00	.00	.00	.31	.03	.04	.20	.00	.00	.00	.00
17	.00	.00	.00	.00	.04	.03	.04	.01	.00	.00	.00	.00
18	.00	.00	.00	.00	.04	.03	.03	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.03	.03	.02	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.02	.03	.02	.00	.00	.00	.00	.00
21	.00	.00	.00	.06	.02	.03	.05	.05	.00	.00	.00	.00
22	.00	.00	.00	1.3	.02	.02	.05	.05	.13	.00	.00	.00
23	.00	.00	.72	.03	.02	.02	.04	.04	.04	.00	.00	.00
24	.00	.00	.00	.01	.04	.02	.04	.00	.00	.00	.00	.00
25	.00	.00	.00	.02	.06	.02	.03	.00	.00	.00	.00	1.2
26	.00	.00	.00	.02	.07	.02	.02	.01	.00	.00	.00	.64
27	.00	.00	.00	.03	.06	.31	.04	.02	.00	.00	.00	4.8
28	.00	.00	.43	.04	.07	.18	.03	.06	.00	.00	.00	12
29	.00	.00	.04	.05	.07	.09	.03	.04	.00	.00	.00	3.1
30	.00	.00	.01	.07	---	.04	.02	.05	.00	.00	.00	.79
31	.00	---	.00	.07	---	.01	---	.05	---	.00	.00	---
TOTAL	.00	.00	1.20	1.72	4.42	1.52	1.53	9.78	1.53	.00	.00	30.85
MEAN	.000	.000	.039	.055	.15	.049	.051	.32	.051	.000	.000	1.03
MAX	.00	.00	.72	1.3	.37	.31	.55	3.1	1.0	.00	.00	12
MIN	.00	.00	.00	.00	.02	.01	.01	.00	.00	.00	.00	.00
AC-FT	.00	.00	2.4	3.4	8.8	3.0	3.0	19	3.0	.00	.00	61

CAL YR 1979 TOTAL 582.13 MEAN 1.59 MAX 210 MIN .00 AC-FT 1150
WTR YR 1980 TOTAL 52.55 MEAN .14 MAX 12 MIN .00 AC-FT 104

08146000 SAN SABA RIVER AT SAN SABA, TX

LOCATION.--Lat 31°12'47", long 98°43'09", San Saba County, Hydrologic Unit 12090109, on right bank at downstream side of bridge on State Highway 16, 1.2 mi (1.9 km) north of San Saba, 2.7 mi (4.3 km) upstream from Mill Creek, 4.8 mi (7.7 km) downstream from China Creek, and 16.6 mi (26.7 km) upstream from mouth.

DRAINAGE AREA.--3,042 mi² (7,879 km²).

PERIOD OF RECORD.--December 1904 to December 1906 (gage heights only), September 1915 to current year. Published as "near San Saba" December 1904 to December 1906 and September 1915 to August 1930.

REVISED RECORDS.--WSP 458: 1915-16. WSP 1282: Drainage area. WSP 1512: 1918-19(M), 1922, 1931(M), 1935-36. WSP 1922: 1917.

GAGE.--Water-stage recorder. Datum of gage is 1,162.16 ft (354.226 m) National Geodetic Vertical Datum of 1929. See WSP 1922 for history of changes prior to July 8, 1953. Since Oct. 1, 1956, supplementary water-stage recorder 2,780 ft (847 m) to right of main-channel gage used for floodflows.

REMARKS.--Records good. Many diversions above station for irrigation and municipal use affect low flow. Flow partly affected by Brady Creek Reservoir (see station 08144900), capacity 90,300 acre-ft (111 hm³). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--65 years, 239 ft³/s (6.768 m³/s), 173,200 acre-ft/yr (214 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 203,000 ft³/s (5,750 m³/s) July 23, 1938, gage height, 39.3 ft (11.98 m), present site and datum, from rating curve extended above 41,000 ft³/s (1,160 m³/s) on basis of slope-area measurement of peak flow; no flow at times in 1918, 1930, 1954-56, and 1963-64.
Maximum stage since at least 1899, that of July 23, 1938.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 6, 1899, reached a stage of 36.7 ft (11.19 m), present site and datum, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 40,700 ft³/s (1,150 m³/s) Sept. 9 at 0930 hours, gage height, 29.31 ft (8.934 m), no other peak above base of 3,000 ft³/s (85.0 m³/s); minimum, 1.7 ft³/s (0.048 m³/s) Aug. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	53	62	91	82	75	67	47	69	30	6.9	11
2	36	50	65	91	83	73	72	71	66	28	8.4	8.4
3	33	53	68	88	82	75	73	73	64	27	9.7	7.4
4	30	52	65	85	83	77	69	63	61	26	12	6.9
5	29	51	66	84	82	75	66	68	59	25	11	8.7
6	30	52	69	84	80	74	67	62	56	22	8.4	12
7	31	50	66	83	80	76	66	79	53	19	7.3	13
8	35	50	62	81	93	79	54	182	59	18	5.9	1930
9	37	56	64	81	95	80	46	165	152	20	4.8	31000
10	35	59	64	82	91	77	42	144	136	20	7.5	5850
11	30	59	65	82	88	74	42	104	78	18	15	1790
12	30	59	76	80	88	80	43	104	68	17	21	768
13	29	60	88	79	91	81	57	100	67	14	18	424
14	29	64	82	79	88	77	71	100	61	14	12	270
15	36	64	81	80	86	75	64	160	58	12	10	218
16	40	62	80	80	82	72	64	387	53	15	8.7	197
17	39	62	80	80	82	67	68	280	51	13	11	166
18	37	60	79	79	83	64	65	167	46	9.5	13	145
19	34	65	80	79	86	63	58	132	39	9.0	9.0	132
20	38	66	80	80	86	63	55	117	33	6.6	8.0	120
21	45	67	80	84	84	60	50	127	36	5.2	7.2	117
22	49	70	87	98	82	60	46	139	43	4.7	9.7	115
23	46	69	99	112	82	60	46	148	52	5.5	12	106
24	43	70	113	104	81	63	48	116	69	8.0	12	101
25	40	69	113	96	79	58	50	103	79	7.7	9.8	650
26	39	70	98	95	78	55	45	93	54	5.5	7.6	885
27	41	69	90	91	77	65	44	86	49	6.8	5.0	927
28	43	67	98	86	76	89	44	81	43	12	3.8	768
29	43	67	112	84	77	89	41	78	37	11	2.1	617
30	51	65	103	84	---	76	40	78	32	8.0	4.5	1490
31	54	---	99	84	---	66	---	74	---	7.4	11	---
TOTAL	1170	1830	2534	2666	2427	2218	1663	3728	1823	444.9	292.3	48853.4
MEAN	37.7	61.0	81.7	86.0	83.7	71.5	55.4	120	60.8	14.4	9.43	1628
MAX	54	70	113	112	95	89	73	387	152	30	21	31000
MIN	29	50	62	79	76	55	40	47	32	4.7	2.1	6.9
AC-FT	2320	3630	5030	5290	4810	4400	3300	7390	3620	882	580	96900

CAL YR 1979 TOTAL 41755.0 MEAN 116 MAX 1150 MIN 29 AC-FT 82820
WTR YR 1980 TOTAL 69649.6 MEAN 190 MAX 31000 MIN 2.1 AC-FT 138100

08147000 COLORADO RIVER NEAR SAN SABA, TX
(National stream-quality accounting network)

LOCATION.--Lat 31°13'04", long 98°33'51", San Saba-Lampasas County line, Hydrologic Unit 12090201, near left bank at downstream side of pier of bridge on U.S. Highway 190, 5.2 mi (8.4 km) downstream from San Saba River, 9.2 mi (14.8 km) east of San Saba, and at mile 474.3 (763.1 km).

DRAINAGE AREA.--30,600 mi² (79,250 km²), approximately of which 12,880 mi² (33,360 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1915 to October 1922 (published as "near Chadwick"), October 1923 to August 1930 (published as "near Tow"), September 1930 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 458: 1916. WSP 858: 1900(M), 1936(M). WSP 1118: Drainage area. WSP 1512: 1916-18(M), 1936. WSP 1732: 1925-26(M).

GAGE.--Water-stage recorder. Datum of gage is 1,096.22 ft (334.128 m) National Geodetic Vertical Datum of 1929. See WSP 1922 for history of changes prior to May 23, 1940.

REMARKS.--Water-discharge records good. Many diversion above station for irrigation, municipal use, and oilfield operation. Flow is affected by four reservoirs upstream from Winchell and one reservoir in the San Saba River and Pecan Bayou basins; combined capacity, 1,973,000 acre-ft (2.43 km³). Flow is affected at times by discharge from the flood-detention pools of 187 floodwater-retarding structures with combined detention capacity of 203,600 acre-ft (251 hm³). These structures control runoff from 934 mi² (2,419 km²). The National Weather Service operates a gage-height telemeter at this station.

AVERAGE DISCHARGE.--50 years (water years 1917-19, 1921-22, 1924-68) prior to completion of Robert Lee Dam, 1,340 ft³/s (37.95 m³/s), 970,100 acre-ft/yr (1,200 hm³/yr); 12 years (water years 1969-80) partially regulated, 683 ft³/s (19.34 m³/s), 494,800 acre-ft/yr (610 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 224,000 ft³/s (6,340 m³/s) July 23, 1938, gage height, 63.2 ft (19.26 m), present site, based on floodmarks at site then in use; no flow Aug. 27-31, 1954; Aug. 3-13, 1963; July 20 to Aug. 8, Aug. 11-14, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage during period 1878 to July 22, 1938, 58.4 ft (17.80 m) Sept. 25, 1900, discharge, 184,000 ft³/s (5,210 m³/s), present site, from floodmarks at former site.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 36,000 ft³/s (1,020 m³/s) Sept. 9 at 2300 hours, gage height, 26.60 ft (8.108 m); minimum, 3.5 ft³/s (0.099 m³/s) July 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	80	92	227	173	128	102	43	403	137	10	4.8
2	67	80	90	195	169	127	90	49	323	117	8.6	10
3	66	76	91	182	164	128	83	71	237	103	8.0	16
4	56	75	91	170	167	126	75	76	180	90	9.6	14
5	61	73	91	178	162	123	71	68	141	68	12	12
6	60	72	93	190	157	124	68	68	120	56	17	11
7	49	74	97	171	156	118	67	151	103	55	16	19
8	49	73	97	155	181	117	60	1940	94	46	12	29
9	51	71	95	153	185	117	53	3030	145	32	10	20100
10	49	74	92	154	174	116	42	1450	1800	22	8.9	24700
11	47	78	90	151	169	110	44	533	1180	20	8.9	22800
12	38	77	98	146	164	112	41	400	546	17	13	28000
13	34	77	111	143	169	109	57	369	313	11	26	16700
14	28	76	131	146	171	108	62	608	209	10	31	1980
15	31	78	129	147	171	103	71	2220	205	10	24	1290
16	42	80	131	149	174	103	73	9560	174	9.5	17	920
17	52	79	132	149	183	97	89	5160	132	7.6	14	732
18	51	80	129	151	185	89	90	2440	108	8.9	14	581
19	45	80	129	150	180	86	81	1510	102	7.6	15	468
20	40	89	124	152	167	86	70	889	84	5.6	15	387
21	39	88	122	155	160	81	64	640	71	6.5	11	321
22	57	90	139	178	160	73	62	719	77	10	8.5	288
23	74	92	163	229	159	74	54	617	396	5.2	8.5	248
24	88	97	191	259	152	72	51	469	3570	3.8	9.9	223
25	85	97	193	257	148	74	63	600	2130	4.0	13	2590
26	86	98	190	237	144	69	50	399	909	5.1	15	4610
27	84	94	183	204	141	77	42	298	498	6.8	13	8160
28	77	89	201	189	136	86	42	277	310	9.3	11	2900
29	72	87	253	181	131	96	42	306	216	15	8.8	5100
30	181	92	253	171	---	96	39	864	167	16	7.4	13200
31	117	---	253	169	---	119	---	615	---	13	5.7	---
TOTAL	1942	2466	4274	5488	4752	3144	1904	36439	14943	927.9	401.8	156413.8
MEAN	62.6	82.2	138	177	164	101	63.5	1175	498	29.9	13.0	5214
MAX	181	98	253	259	185	128	102	9560	3570	137	31	28000
MIN	28	71	90	143	131	69	39	43	71	3.8	5.7	4.8
AC-FT	3850	4890	8480	10890	9430	6240	3780	72280	29640	1840	797	310200

CAL YR 1979 TOTAL 114694.0 MEAN 314 MAX 7600 MIN 28 AC-FT 227500
WTR YR 1980 TOTAL 233095.5 MEAN 637 MAX 28000 MIN 3.8 AC-FT 462300

08147000 COLORADO RIVER NEAR SAN SABA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: September 1947 to current year. Chemical and biochemical analyses: October 1969 to current year. Pesticide analyses: January 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1947 to current year.
WATER TEMPERATURES: October 1947 to current year.
SUSPENDED SEDIMENT DISCHARGE: December 1950 to September 1962.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 5,660 micromhos June 28, 1962; minimum daily, 161 micromhos Sept. 11, 1952.
WATER TEMPERATURES: Maximum daily, 37.0°C Aug. 3, 1956; minimum daily, 0.0°C Jan. 29, 1948, Jan. 30, 1951.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,460 micromhos Jan. 1; minimum daily, 211 micromhos Sept. 10.
WATER TEMPERATURES: Maximum daily, 34.0°C June 30, July 1; minimum daily, 6.0°C Dec. 17, Jan. 31.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 23...	1230	78	680	7.7	19.0	13	7.3	81	1.4	130	27
NOV 06...	1320	70	700	8.1	14.0	22	8.9	88	.8	92	100
DEC 11...	1340	85	935	7.6	12.0	17	9.4	90	1.0	35	43
JAN 08...	1215	156	1140	7.9	8.0	--	11.5	100	1.7	34	27
FEB 05...	1345	160	868	8.1	9.5	7.6	17.6	160	6.2	K5	33
MAR 04...	1140	127	1018	8.0	11.0	28	11.4	109	1.8	K10	K15
APR 08...	1400	54	698	7.8	19.0	150	7.0	77	2.1	37	63
MAY 13...	1300	310	607	7.3	22.5	180	6.1	73	1.7	920	1100
JUN 11...	1045	1190	882	7.4	26.0	350	4.8	61	2.0	1600	760
JUL 08...	1550	43	548	8.0	31.0	14	9.5	132	2.8	30	K8
AUG 12...	1900	16	792	8.0	28.5	7.0	8.0	104	1.4	28	26
SEP 12...	1030	28100	248	7.7	22.0	1500	5.1	61	3.4	26000	50000

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 23...	280	49	59	32	34	.9	3.6	280	0	33	57
NOV 06...	270	34	61	29	43	1.1	3.9	290	0	44	70
DEC 11...	340	100	77	36	63	1.5	3.6	290	0	70	110
JAN 08...	350	160	77	38	97	2.3	4.8	230	0	120	180
FEB 05...	300	120	66	34	68	1.7	3.8	220	0	85	130
MAR 04...	350	150	74	39	79	1.9	4.0	240	0	100	150
APR 08...	280	41	59	32	36	.9	2.9	290	0	30	53
MAY 13...	190	67	47	17	37	1.2	4.4	150	0	53	71
JUN 11...	230	100	60	19	83	2.4	6.4	150	0	82	160
JUL 08...	200	41	46	21	34	1.0	4.3	200	0	42	58
AUG 12...	230	27	42	31	55	1.6	3.0	250	0	22	100
SEP 12...	86	14	27	4.5	11	.5	4.8	88	0	19	18

08147000 COLORADO RIVER NEAR SAN SABA, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)
OCT 23...	.2	12	380	370	.33	.32	.040	.060	.56	.39
NOV 06...	.2	10	382	406	.46	.44	.020	.030	.64	.52
DEC 11...	.2	11	546	514	.13	.12	.020	.010	.74	.45
JAN 08...	.3	6.2	647	638	.48	.42	.000	.000	1.0	.89
FEB 05...	.2	6.2	511	505	.86	.80	.010	.010	1.4	.48
MAR 04...	.3	3.2	494	569	.37	.37	.030	.030	.59	.50
APR 08...	.2	.2	369	357	.30	.12	.120	.130	.62	.64
MAY 13...	.3	9.0	340	312	.41	.36	.200	.290	.90	.53
JUN 11...	.2	9.3	523	422	.66	.50	.190	.180	1.8	.41
JUL 08...	.4	13	345	317	.00	.00	.050	.050	.95	.37
AUG 12...	.2	16	381	392	.00	.00	.000	.000	1.1	.76
SEP 12...	.2	.0	155	128	.47	.36	.460	.220	2.2	.77

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	CARBON, ORGANIC SUSPENDED (MG/L AS C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 23...	.60	.45	.060	.040	--	8.4	.3	69	15	97
NOV 06...	.66	.55	.050	.000	6.5	--	--	87	16	93
DEC 11...	.76	.46	.030	.020	12	--	--	81	19	81
JAN 08...	1.0	.89	.120	.040	6.8	--	--	34	14	91
FEB 05...	1.4	.49	.130	.010	--	6.8	5.5	73	32	97
MAR 04...	.62	.53	.040	.000	3.0	--	--	52	18	89
APR 08...	.74	.77	.070	.040	11	--	--	88	13	97
MAY 13...	1.1	.82	.170	.260	8.7	--	--	--	--	--
JUN 11...	2.0	.59	.510	.170	--	13	6.7	652	2100	100
JUL 08...	1.0	.42	.020	.020	10	--	--	54	6.3	97
AUG 12...	1.1	.76	.060	.020	--	9.1	.2	59	2.5	99
SEP 12...	2.7	.99	.540	.270	28	--	--	1860	141000	97

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUSPENDED TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)
OCT 23...	1230	2	0	2	200	100	100	1	0	2	0
NOV 06...	1320	--	--	--	--	--	--	--	--	--	--
JAN 08...	1215	--	--	--	--	--	--	--	--	--	--
FEB 05...	1345	2	1	1	0	0	100	1	0	<1	0
APR 08...	1400	--	--	--	--	--	--	--	--	--	--
JUN 11...	1045	5	2	3	300	100	200	1	--	<1	0
JUL 08...	1550	--	--	--	--	--	--	--	--	--	--
AUG 12...	1900	3	0	3	100	0	100	0	--	<1	0

08147000 COLORADO RIVER NEAR SAN SABA, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)
OCT 23...	0	0	0	0	<3	13	13	0	290	--	<10
NOV 06...	--	--	--	--	--	--	--	--	--	--	--
JAN 08...	--	--	--	--	--	--	--	--	--	--	--
FEB 05...	0	0	0	0	<3	0	0	0	330	320	<10
APR 08...	--	--	--	--	--	--	--	--	--	--	--
JUN 11...	0	0	6	--	<3	17	16	1	12000	12000	90
JUL 08...	--	--	--	--	--	--	--	--	--	--	--
AUG 12...	0	10	1	--	<3	8	8	0	520	510	10

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI)
OCT 23...	8	8	0	30	30	2	.3	.1	.2	9	7
NOV 06...	--	--	--	--	--	--	--	--	--	--	--
JAN 08...	--	--	--	--	--	--	--	--	--	--	--
FEB 05...	4	4	0	30	30	2	.2	.0	.2	2	2
APR 08...	--	--	--	--	--	--	--	--	--	--	--
JUN 11...	19	19	0	440	440	5	.7	.6	.1	21	14
JUL 08...	--	--	--	--	--	--	--	--	--	--	--
AUG 12...	5	4	1	10	8	2	1.6	1.4	.2	6	3

DATE	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 23...	2	0	0	0	0	0	0	10	5	5
NOV 06...	--	--	--	--	0	--	--	--	--	--
JAN 08...	--	--	--	--	0	--	--	--	--	--
FEB 05...	0	1	1	0	0	0	0	10	7	<3
APR 08...	--	--	--	--	0	--	--	--	--	--
JUN 11...	7	1	1	0	0	0	0	60	--	<3
JUL 08...	--	--	--	--	0	--	--	--	--	--
AUG 12...	3	0	0	0	1	1	0	30	30	3

DATE	TIME	PCB TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)
NOV 06...	1320	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 05...	1345	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
NOV 06...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 05...	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--

08147000 COLORADO RIVER NEAR SAN SABA, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LENGTH OF EXPO-SURE (DAYS)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS)
DEC 11...	35	66.7	72.4	32.7	4.20	174
FEB 05...	28	1.58	1.89	.310	.000	1000
MAR 04...	28	37.0	38.8	10.2	.800	176
AUG 12...	35	10.0	11.7	5.21	.500	326

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

DATE	NOV 6,79	MAR 4,80	MAY 13,80	JUN 11,80	JUL 8,80	AUG 12,80
TIME	1320	1140	1300	1045	1550	1900
TOTAL CELLS/ML	5700	5100	970	21000	49000	9400
DIVERSITY: DIVISION	1.4	1.7	1.5	1.5	1.0	1.4
.CLASS	1.4	1.9	1.5	1.5	1.0	1.4
..ORDER	2.1	2.5	1.7	2.1	1.7	1.9
...FAMILY	2.4	3.0	1.9	2.3	1.9	2.2
....GENUS	3.3	3.2	2.0	2.9	2.3	2.7

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	*	0	--	-	--	-	--	-	*	0	50	1
...COELASTRACEAE												
....COELASTRUM	--	-	--	-	--	-	--	-	500	1	--	-
...HYDRODICTYACEAE												
....PEDIASTRUM	--	-	--	-	--	-	--	-	--	-	200	2
...MICRACTINIACEAE												
....GOLENKINIA	--	-	--	-	--	-	--	-	--	-	*	0
...OOCYSTACEAE												
....ANKISTRODESMUS	160	3	84	2	13	1	460	2	430	1	130	1
....DICTYOSPHAERIUM	290	5	--	-	--	-	540	3	--	-	--	-
....KIRCHNERIELLA	130	2	130	2	--	-	380	2	--	-	--	-
....NEPHROCYTIUM	*	0	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	160	3	170	3	--	-	310	1	--	-	*	0
....SELENASTRUM	--	-	--	-	--	-	--	-	*	0	*	0
....TETRAEDRON	*	0	--	-	13	1	--	-	*	0	130	1
....TREUBARIA	--	-	--	-	--	-	--	-	*	0	*	0
....WESTELLA	--	-	--	-	--	-	--	-	290	1	100	1
...SCENEDESMACEAE												
....CRUCIGENIA	310	5	--	-	--	-	310	1	--	-	200	2
....SCENEDESMUS	650	11	510	10	260#	27	1500	7	1100	2	430	5
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	200	2
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CARTERIA	130	2	--	-	--	-	--	-	--	-	980	10
....CHLAMYDOMONAS	90	2	840#	17	--	-	--	-	1100	2	180	2
....CHLOROGONIUM	--	-	--	-	--	-	--	-	*	0	--	-
...VOLVOCACEAE												
....PANDORINA	--	-	--	-	--	-	--	-	2300	5	--	-
..ZYGNEMATALES												
...DESMIDIACEAE												
....COSMARIUM	--	-	--	-	--	-	--	-	--	-	*	0
....STAURASTRUM	--	-	--	-	--	-	*	0	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08147000 COLORADO RIVER NEAR SAN SABA, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980--Continued

DATE TIME	NOV 6,79 1320		MAR 4,80 1140		MAY 13,80 1300		JUN 11,80 1045		JUL 8,80 1550		AUG 12,80 1900	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	130	2	340	7	64	7	3300#	16	1500	3	100	1
....MELOSIRA	140	3	210	4	--	-	310	1	*	0	100	1
..PENNALES												
...FRAGILARIACEAE												
....FRAGILARIA	--	-	510	10	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	*	0	--	-	--	-
...NAVICULACEAE												
....GYROSIGMA	--	-	--	-	39	4	--	-	--	-	--	-
....NAVICULA	--	-	42	1	26	3	--	-	--	-	*	0
...NITZSCHIACEAE												
....NITZSCHIA	180	3	290	6	26	3	1000	5	430	1	100	1
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	170	3	--	-	--	-	--	-	--	-
.XANTHOPHYCEAE												
..HETEROCOCCALES												
...CENTRITRACTACEAE												
....CENTRITRACTUS	36	1	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	*	0	1500#	30	--	-	--	-	--	-	130	1
...CRYPTOMONADACEAE												
....CRYPTOMONAS	*	0	84	2	--	-	*	0	720	1	130	1
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	860#	15	--	-	--	-	1500	7	28000#	56	5300#	57
....ANACYSTIS	1800#	31	170	3	520#	53	8800#	42	4500	9	300	3
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENOPSIS	--	-	--	-	--	-	--	-	--	-	180	2
...OSCILLATORIACEAE												
....OSCILLATORIA	560	10	--	-	--	-	2100	10	7200	15	--	-
...RIVULARIACEAE												
....RAPHIDIOPSIS	--	-	--	-	--	-	*	0	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	36	1	--	-	13	1	230	1	500	1	230	2
....PHACUS	--	-	--	-	--	-	*	0	--	-	--	-
....TRACHELOMONAS	*	0	--	-	--	-	--	-	*	0	50	1
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	*	0	--	-	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08147000 COLORADO RIVER NEAR SAN SABA, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	1942	781	433	2270	94	494	63	331	280
NOV.	1979	2466	784	434	2890	94	624	63	416	280
DEC.	1979	4274	1060	591	6820	150	1740	110	1270	350
JAN.	1980	5488	1160	650	9630	170	2550	130	1900	380
FEB.	1980	4752	1030	576	7400	140	1840	100	1320	350
MAR.	1980	3144	872	484	4110	110	934	76	643	300
APR.	1980	1904	773	428	2200	92	472	61	313	270
MAY	1980	36439	514	284	27900	55	5370	34	3320	190
JUNE	1980	14943	582	321	12900	62	2490	38	1540	210
JULY	1980	927.9	590	325	813	61	153	37	93	220
AUG.	1980	401.8	705	389	422	79	86	51	55	250
SEPT	1980	156413.8	287	156	66100	23	9760	11	4680	110
TOTAL		233095.5	**	**	143000	**	26500	**	15900	**
WTD. AVG.		637	414	228	**	42	**	25	**	150

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	650	917	916	1460	993	1000	967	713	1110	637	627	697
2	647	821	892	1340	935	995	996	636	700	612	630	667
3	651	795	920	1250	920	1020	864	724	385	577	640	686
4	659	811	935	1180	901	995	753	651	481	560	649	681
5	643	748	856	1200	894	912	723	552	498	548	658	682
6	718	730	837	1290	878	991	790	590	465	558	665	679
7	745	717	811	1220	915	1000	694	562	496	564	680	664
8	735	702	986	1120	948	960	698	700	556	565	698	657
9	722	691	928	1090	1000	917	659	649	548	575	715	260
10	724	690	911	1100	1040	910	540	591	660	581	723	211
11	666	692	935	1080	1050	901	650	572	550	577	717	297
12	698	710	902	1070	1040	928	740	579	498	578	720	274
13	712	735	745	1100	1050	817	690	590	467	591	725	282
14	702	721	925	1110	1000	840	676	576	489	595	700	387
15	682	688	985	1070	1010	855	670	450	563	601	708	370
16	647	731	979	1040	1080	777	668	360	531	602	720	398
17	665	686	1050	1050	1150	874	814	278	526	600	731	420
18	682	688	1020	1050	1190	850	815	318	580	597	739	452
19	688	711	991	1060	1160	834	846	389	603	617	710	476
20	689	734	1010	1040	1130	823	875	493	615	625	693	498
21	690	793	915	1050	1090	745	801	562	626	624	716	518
22	660	750	956	1040	1100	760	822	914	609	624	722	536
23	648	714	1000	1220	1120	796	820	1000	585	626	706	551
24	693	781	1120	1200	1110	752	815	1220	550	625	719	558
25	808	963	1100	1220	1090	738	819	1210	363	622	729	352
26	856	949	1080	1260	1070	836	756	822	750	619	738	329
27	936	970	1150	1200	1040	841	684	810	878	618	737	327
28	933	960	1230	1180	1020	780	653	850	837	615	730	398
29	930	956	1310	1130	1010	732	677	615	786	600	727	352
30	1000	799	1390	1090	---	672	673	1020	722	594	715	300
31	1130	---	1400	1050	---	772	---	1060	---	616	705	---
MEAN	742	778	1010	1150	1030	859	755	679	601	598	703	465

08147000 COLORADO RIVER NEAR SAN SABA, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	18.0	12.0	12.0	7.0	---	19.0	24.0	28.0	34.0	31.0	28.0
2	26.0	17.0	11.0	13.0	10.0	9.0	21.0	24.0	---	33.0	31.0	28.0
3	25.0	15.0	---	---	16.0	11.0	20.0	23.0	28.0	33.0	31.0	30.0
4	23.0	17.0	11.0	12.0	12.0	16.0	21.0	21.0	28.0	---	30.0	29.0
5	23.0	16.0	13.0	11.0	13.0	15.0	20.0	14.0	30.0	32.0	29.0	29.0
6	23.0	17.0	12.0	13.0	14.0	16.0	27.0	20.0	28.0	33.0	29.0	25.0
7	26.0	15.0	12.0	10.0	---	15.0	27.0	25.0	31.0	32.0	27.0	26.0
8	---	15.0	12.0	12.0	9.0	---	21.0	22.0	30.0	32.0	32.0	25.0
9	22.0	17.0	14.0	10.0	---	18.0	20.0	23.0	28.0	31.0	30.0	23.0
10	21.0	15.0	11.0	13.0	9.0	14.0	21.0	24.0	27.0	33.0	28.0	22.0
11	21.0	15.0	---	12.0	10.0	14.0	---	25.0	---	33.0	29.0	23.0
12	22.0	---	10.0	12.0	10.0	19.0	14.0	26.0	25.0	33.0	---	25.0
13	22.0	12.0	10.0	14.0	12.0	15.0	13.0	---	28.0	32.0	29.0	24.0
14	23.0	9.0	11.0	15.0	14.0	---	17.0	24.0	30.0	33.0	30.0	26.0
15	23.0	14.0	11.0	15.0	14.0	17.0	---	21.0	30.0	32.0	30.0	28.0
16	25.0	15.0	10.0	15.0	---	19.0	20.0	21.0	31.0	32.0	30.0	28.0
17	---	13.0	6.0	14.0	9.0	15.0	21.0	20.0	31.0	---	28.0	---
18	23.0	17.0	12.0	13.0	14.0	15.0	17.0	23.0	32.0	32.0	29.0	29.0
19	25.0	---	10.0	14.0	15.0	18.0	20.0	25.0	33.0	32.0	---	30.0
20	---	19.0	13.0	14.0	17.0	20.0	25.0	25.0	---	32.0	30.0	30.0
21	26.0	16.0	12.0	10.0	17.0	20.0	22.0	25.0	30.0	32.0	30.0	30.0
22	22.0	---	15.0	11.0	---	---	22.0	26.0	30.0	32.0	30.0	30.0
23	21.0	12.0	13.0	---	17.0	18.0	---	---	32.0	30.0	30.0	29.0
24	20.0	13.0	14.0	---	17.0	18.0	21.0	30.0	31.0	30.0	31.0	28.0
25	21.0	15.0	---	13.0	16.0	15.0	22.0	30.0	30.0	---	31.0	26.0
26	22.0	13.0	15.0	12.0	15.0	16.0	22.0	30.0	---	33.0	31.0	25.0
27	22.0	15.0	---	8.0	17.0	16.0	20.0	30.0	32.0	33.0	30.0	25.0
28	---	---	17.0	8.0	19.0	---	22.0	---	32.0	---	---	23.0
29	---	11.0	12.0	13.0	15.0	15.0	22.0	28.0	33.0	29.0	30.0	23.0
30	---	10.0	13.0	10.0	---	19.0	24.0	27.0	34.0	31.0	30.0	22.0
31	20.0	---	11.0	6.0	---	16.0	---	---	---	32.0	30.0	---
MEAN	23.0	14.5	12.0	12.0	13.5	16.0	21.0	24.5	30.0	32.0	30.0	26.5

08148000 LAKE BUCHANAN NEAR BURNET, TX

LOCATION.--Lat 30°45'04", long 98°25'06", Burnet County, Hydrologic Unit 12090201, in powerhouse at Buchanan Dam on Colorado River, 1.3 mi (2.1 km) upstream from bridge on State Highway 29, 11 mi (18 km) west of Burnet, and at mile 413.6 (665.6 km).

DRAINAGE AREA.--31,250 mi² (80,940 km²), approximately, of which 12,880 mi² (33,360 km²) probably is noncontributing.

PERIOD OF RECORD.--May 1937 to current year. Prior to Oct. 1, 1968, published as Buchanan Reservoir.

REVISED RECORDS.--WSP 1118: Drainage area.

GAGE.--Nonrecording gage. Datum of gage is 0.48 ft (0.146 m) National Geodetic Vertical Datum of 1929 (levels by Lower Colorado River Authority). Prior to July 1938, temporary staff and float gages at same site and datum.

REMARKS.--The lake is formed by two reinforced concrete multiple-arch sections, three banks of tainter gates, a 1,100-foot (335 m) uncontrolled emergency concrete spillway, and natural ground. A net opening of 1,270 ft (387 m) is controlled by thirty 33- by 15-foot (10 by 5 m) and by seven 40- by 15-foot (12 by 5 m) tainter gates. The dam was completed and storage began May 20, 1937. Water is used for power development and for irrigation below Columbus. The power generating features consist of three generating units, each with a 12,677 kilowatt capacity. A pump-back unit, with a capacity of 840 ft³/s (23.8 m³/s), returns water from Inks Lake to Lake Buchanan during off-peak power demand periods. Inflow is largely regulated by twelve major reservoirs with a combined capacity of 2,438,000 acre-ft (3.01 km³), of which 1,091,000 acre-ft (1.35 km³) is for flood control. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08147000. The capacity table is based on a 1925 survey. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Top of dam	1,025.5	-
Crest of gravity overflow spillway (top of conservation storage)	1,020.0	992,000
Crest of spillway (15 ft gates)	1,005.0	678,000
Crest of spillway (25 ft gates)	995.0	505,000
Invert of three 12-foot-diameter penstocks	937.0	36,800

COOPERATION.--Capacity curve and gage-height record were furnished by the Lower Colorado River Authority.

EXTREMES (at 2400) FOR PERIOD OF RECORD.--Maximum contents, 1,010,000 acre-ft (1.25 km³) Jan. 24, 1968, gage height, 1,020.8 ft (311.14 m); minimum after initial filling of lake in July 1938, 340,800 acre-ft (420 hm³) Sept. 8-10, 1952, gage height, 983.4 ft (299.74 m).

EXTREMES (at 2400) FOR CURRENT YEAR.--Maximum contents observed, 979,600 acre-ft (1.21 km³) Sept. 30, gage height, 1,019.46 ft (310.731 m); minimum, 753,600 acre-ft (929 hm³) Sept. 7, gage height, 1,008.93 ft (307.522 m).

Capacity table (gage height, in feet, and total contents, in acre-feet)

1,008.0	735,000	1,016.0	902,000
1,012.0	816,000	1,020.0	992,000

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	934300	921600	917200	926900	929900	939600	941800	901600	944700	884200	816800	757400
2	934100	921400	917200	926600	930400	938100	942500	898900	942500	880700	812900	757000
3	934100	921100	917000	926600	930600	937900	942700	895400	940900	878200	810300	755600
4	933200	920500	917200	926600	931000	938500	943100	892300	938500	876300	808000	754400
5	932100	920700	918300	927100	931300	938700	942700	888100	936100	874900	805700	754200
6	930800	920500	917400	927700	931300	938500	942700	885500	933900	873200	804200	754000
7	929300	919800	917200	927500	931700	938500	942900	884400	931700	871200	802400	753600
8	929100	919800	917200	927500	934100	939200	942500	885700	930400	869000	800500	754200
9	929300	920000	917200	927700	934100	939200	942500	891200	929100	867700	797900	766000
10	927700	919400	917200	928400	934100	939400	941800	895800	927500	865500	797100	823100
11	927700	918700	918900	928800	934100	939600	943400	897600	928400	861300	796100	863700
12	926200	918900	920500	928400	934600	940300	943100	898700	927100	858400	792800	915600
13	926900	918700	920300	928800	934600	940300	939800	901100	924900	857000	791200	960700
14	926200	918700	920300	928800	935000	940100	939600	902000	923100	854600	789400	966200
15	925800	918300	920300	929300	936100	940100	939400	914100	920300	853000	787600	967900
16	924900	918300	920900	929500	936500	940700	939000	931000	918100	851100	785600	967900
17	924900	918300	919600	929500	936500	940500	939000	944900	913400	849400	784400	965600
18	923600	918700	919600	929500	936500	940100	937400	952200	910100	847100	782000	963700
19	923300	918900	919600	929900	937200	940100	934100	956100	907100	845200	780000	960500
20	922900	918700	919800	930600	937400	940300	931300	958400	905100	843700	778200	958000
21	922700	919600	920900	930800	937900	940100	927300	961200	901600	840800	775400	954100
22	923300	918700	921400	932100	938100	939600	924400	963000	899400	839900	773800	951500
23	922700	918300	922900	932100	938100	940300	923100	962100	896500	837800	770000	949200
24	922200	918300	923100	931900	938500	940100	921600	960700	896700	836000	769200	946000
25	921800	918300	923100	931700	939000	940300	920700	959600	898700	833400	767200	944900
26	921400	918300	923800	931500	939200	940300	916500	958000	898700	831500	765600	944900
27	921100	918500	923800	931300	939400	942500	913400	954300	896900	829900	763400	959600
28	921400	918300	924200	931000	939800	942300	910100	952000	894300	827300	761200	961400
29	920500	917600	926600	930800	940300	942700	906400	949500	891200	825700	759400	963000
30	922200	917400	926900	930600	---	942700	904000	948100	887900	822300	758600	979600
31	922000	---	926900	930400	---	942500	---	946500	---	818500	758200	---
MAX	934300	921600	926900	932100	940300	942700	943400	963000	944700	884200	816800	979600
MIN	920500	917400	917000	926600	929900	937900	904000	884400	887900	818500	758200	753600
(†)	1016.91	1016.70	1017.13	1017.29	1017.74	1017.84	1016.09	1018.02	1015.36	1012.12	1009.16	1019.46
(‡)	-12800	-4600	+9500	+3500	+9900	+2200	-38500	+42500	-58600	-69400	-60300	+221400

CAL YR 1979 MAX 981400 MIN 772200 ‡ +148500
WTR YR 1980 MAX 979600 MIN 753600 ‡ +44800

† Gage height, in feet, at end of month.
‡ Change in contents, in acre-feet.

08150000 LLANO RIVER NEAR JUNCTION, TX

LOCATION.--Lat 30°29'45", long 99°43'19", Kimble County, Hydrologic Unit 12090204, on right bank 600 ft (180 m) north of Farm Road 2169, 1.4 mi (2.3 km) east of Junction, 3.6 mi (5.8 km) downstream from bridge on Interstate Highway 10, 3.9 mi (6.3 km) downstream from confluence of North and South Llano Rivers, 4.3 mi (6.9 km) upstream from Johnson Fork, and 106.7 mi (171.7 km) upstream from mouth.

DRAINAGE AREA.--1,874 mi^2 (4,854 km^2).

PERIOD OF RECORD.--September 1915 to current year.

REVISED RECORDS.--WSP 568: 1915-16, 1918-20, 1922. WSP 1342: Drainage area. WSP 1922: 1920, 1923.

GAGE.--Water-stage recorder. Datum of gage is 1,630.32 ft (496.922 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 14, 1925, nonrecording gage, and Aug. 14, 1925, to May 17, 1940, water-stage recorder, at present site and datum. May 18, 1940, to Aug. 17, 1944, water-stage recorder at site 5,330 ft (1,620 m) upstream at datum 6.0 ft (1.83 m) higher. Since Aug. 18, 1944, gage at site 5,330 ft (1,620 m) upstream has been used as a supplementary gage.

REMARKS.--Records good except those for periods of no gage-height record, which are fair. Diversions above station for irrigation. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--65 years, 193 ft^3/s (5.466 m^3/s), 1.39 in/yr (35 mm/yr), 139,800 acre-ft/yr (172 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 319,000 ft^3/s (9,030 m^3/s) June 14, 1935, gage height, 43.3 ft (13.20 m) at regular gage, 41.4 ft (12.62 m) at supplementary gage, from floodmarks, from rating curve extended above 54,000 ft^3/s (1,530 m^3/s) on basis of slope-area measurements of 154,000 and 319,000 ft^3/s (4,360 and 9,030 m^3/s); minimum, 3.1 ft^3/s (0.088 m^3/s) Aug. 16, 17, 1956.

Maximum stage since at least 1875, that of June 14, 1935.

EXTREMES OUTSIDE PERIOD OF RECORD.--There was a major flood in 1889 which was the highest known prior to June 14, 1935.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft^3/s (42.5 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Sept. 8	1000	*139,000	3,940	32.23	9.824
				a31.80	9.693
Sept. 29	1630	19,300	547	10.55	3.216
				a14.63	4.459

a From supplementary gage.

Minimum discharge, 39 ft^3/s (1.10 m^3/s) Aug. 9, 10, 26, Aug. 31 to Sept. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	92	97	105	98	88	84	71	89	53	44	42
2	96	93	97	105	99	88	83	72	87	51	44	41
3	95	94	96	104	99	88	82	76	87	51	43	41
4	93	95	97	102	99	88	79	81	80	51	43	41
5	94	95	97	102	98	88	78	80	82	51	43	41
6	94	94	96	103	97	86	77	76	80	50	43	42
7	94	94	96	102	97	86	76	85	80	50	42	64
8	94	95	96	102	101	86	74	86	78	50	42	35900
9	93	95	99	102	101	84	76	82	76	50	42	1100
10	92	92	98	102	99	84	78	78	74	49	47	600
11	93	94	99	102	99	86	79	75	74	49	63	411
12	94	94	110	102	98	86	79	76	72	49	62	318
13	94	94	109	101	98	86	86	83	72	49	55	258
14	96	95	107	101	97	86	85	92	110	48	50	223
15	97	96	106	101	96	84	84	99	97	48	47	197
16	97	95	103	101	102	84	82	145	89	48	47	168
17	94	99	100	100	101	84	81	116	87	48	47	147
18	93	104	100	102	101	84	78	105	80	47	48	124
19	93	101	100	102	99	84	77	99	70	47	47	119
20	92	101	100	102	97	82	76	108	72	47	45	115
21	92	99	102	104	94	82	75	105	89	47	44	112
22	94	95	105	111	92	82	74	105	78	46	44	109
23	94	94	111	112	93	82	74	105	70	46	43	106
24	94	97	113	106	93	82	75	102	68	46	43	104
25	94	100	107	104	91	84	75	97	64	46	42	116
26	94	99	104	102	91	84	73	94	62	45	41	139
27	95	97	102	102	91	90	73	92	58	45	41	142
28	96	96	105	102	90	88	74	94	56	45	42	141
29	94	95	106	102	89	86	73	97	53	45	42	5290
30	93	95	108	103	---	86	71	89	53	44	42	2170
31	91	---	105	99	---	84	---	89	---	44	42	---
TOTAL	2915	2879	3171	3190	2800	2642	2331	2854	2287	1485	1410	48421
MEAN	94.0	96.0	102	103	96.6	85.2	77.7	92.1	76.2	47.9	45.5	1614
MAX	97	104	113	112	102	90	86	145	110	53	63	35900
MIN	91	92	96	99	89	82	71	71	53	44	41	41
CFSM	.05	.05	.05	.06	.05	.05	.04	.05	.04	.03	.02	.86
IN.	.06	.06	.06	.06	.06	.05	.05	.06	.05	.03	.03	.96
AC-FT	5780	5710	6290	6330	5550	5240	4620	5660	4540	2950	2800	96040

CAL YR 1979 TOTAL 47472 MEAN 130 MAX 1310 MIN 81 CFSM .07 IN .94 AC-FT 94160
WTR YR 1980 TOTAL 76385 MEAN 209 MAX 35900 MIN 41 CFSM .11 IN 1.52 AC-FT 151500

NOTE.--No gage-height record Mar. 1 to Apr. 1 and July 2 to Aug. 7.

08150700 LLANO RIVER NEAR MASON, TX

LOCATION.--Lat 30°39'35", long 99°06'29", Mason County, Hydrologic Unit 12090204, on right bank 98 ft (30 m) downstream from downstream bridge on U.S. Highway 87, 1.0 mi (1.6 km) upstream from Beaver Creek, 9.1 mi (14.6 km) southeast of Mason, 10.2 mi (16.4 km) downstream from James River, and 54.5 mi (87.7 km) upstream from mouth.

DRAINAGE AREA.--3,280 mi^2 (8,500 km^2).

PERIOD OF RECORD.--March 1968 to current year.

REVISED RECORD.--WDR TX-75-3: 1968(P).

GAGE.--Water-stage recorder. Datum of gage is 1,230.36 ft (375.014 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 19, 1971, at site 190 ft (58 m) upstream at same datum.

REMARKS.--Records good except those for Sept. 8-30, which are poor. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--12 years (water years 1969-80), 350 ft^3/s (9.912 m^3/s), 1.45 in/yr (37 mm/yr), 253,600 acre-ft/yr (313 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 260,000 ft^3/s (7,360 m^3/s) Sept. 8, 1980, gage height, 37.00 ft (11.278 m), from floodmark, from rating curve extended above 151,000 ft^3/s (4,280 m^3/s) on basis of slope-area measurement and discharge measurement of 145,000 ft^3/s (4,110 m^3/s); minimum, 16 ft^3/s (0.45 m^3/s) July 23, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood since at least 1875 occurred June 14, 1935, discharge 388,000 ft^3/s (11,000 m^3/s), by slope-area measurement of peak flow at site 17.0 mi (27.4 km) downstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft^3/s (85.0 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Sept. 8	1430	*260,000	7,360	a37.00	11.278
Sept. 30	0100	20,600	583	11.58	3.530

a From floodmark.

Minimum daily discharge, 26 ft^3/s (0.74 m^3/s) Aug. 5-9, Aug. 25 to Sept. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100	102	115	132	123	112	104	96	98	50	35	26
2	99	104	116	128	126	106	99	80	96	50	32	26
3	97	105	118	126	124	106	100	79	94	46	29	26
4	95	108	118	124	123	107	98	80	94	46	27	26
5	94	109	119	123	123	109	94	86	90	45	26	26
6	94	111	119	124	122	109	92	86	90	44	26	26
7	92	110	118	124	121	109	90	96	88	43	26	45
8	93	110	118	123	136	111	88	149	86	42	26	69200
9	94	112	118	124	141	110	84	134	86	40	26	17500
10	94	113	119	124	138	108	82	108	82	40	27	2070
11	92	111	121	124	132	107	84	96	79	39	32	939
12	91	112	162	121	131	117	90	92	361	40	37	551
13	92	114	137	119	129	118	93	185	222	40	39	411
14	94	116	134	118	126	113	98	214	106	40	44	344
15	96	115	134	121	126	109	102	166	82	38	43	317
16	98	116	134	123	129	106	113	194	75	36	39	313
17	100	119	133	119	131	106	110	225	73	33	37	309
18	99	126	126	120	136	99	108	162	68	33	37	290
19	100	127	123	120	140	99	104	137	62	33	36	251
20	100	129	124	126	144	99	102	140	58	34	36	218
21	100	128	126	133	133	97	100	140	150	34	34	190
22	107	127	135	172	123	99	102	186	96	34	32	166
23	105	127	142	169	119	97	96	159	77	34	30	148
24	101	126	150	159	117	92	96	134	82	34	28	135
25	101	125	142	149	114	96	98	120	70	34	26	132
26	103	125	139	137	114	98	89	115	64	34	26	163
27	103	125	134	131	113	116	91	108	58	34	26	301
28	102	119	137	129	111	135	96	104	55	35	26	305
29	106	116	142	129	111	133	100	102	52	35	26	301
30	106	115	136	130	---	118	96	100	50	35	26	8040
31	102	---	134	128	---	111	---	100	---	35	26	---
TOTAL	3050	3502	4023	4029	3656	3352	2899	3973	2844	1190	966	102795
MEAN	98.4	117	130	130	126	108	96.6	128	94.8	38.4	31.2	3427
MAX	107	129	162	172	144	135	113	225	361	50	44	69200
MIN	91	102	115	118	111	92	82	79	50	33	26	26
CFSM	.03	.04	.04	.04	.04	.03	.03	.04	.03	.01	.01	1.05
IN.	.03	.04	.05	.05	.04	.04	.03	.05	.03	.01	.01	1.17
AC-FT	6050	6950	7980	7990	7250	6650	5750	7880	5640	2360	1920	203900

CAL YR 1979 TOTAL 71946 MEAN 197 MAX 6320 MIN 91 CFSM .06 IN .82 AC-FT 142700
WTR YR 1980 TOTAL 136279 MEAN 372 MAX 69200 MIN 26 CFSM .11 IN 1.55 AC-FT 270300

08150800 BEAVER CREEK NEAR MASON, TX

LOCATION.--Lat 30°38'39", long 99°05'46", Mason County, Hydrologic Unit 12090204, on left bank at downstream side of downstream bridge on U.S. Highway 87, 1.4 mi (2.3 km) upstream from Llano River, 6.4 mi (10.3 km) downstream from Spring Creek, and 11.1 mi (17.9 km) southeast of Mason.

DRAINAGE AREA.--218 mi^2 (565 km^2).

PERIOD OF RECORD.--July 1963 to current year.

REVISED RECORDS.--WSP 2122: 1964-65.

GAGE.--Water-stage recorder. Datum of gage is 1,253.24 ft (381.988 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 3, 1978, at site 300 ft (91 m) upstream at same datum.

REMARKS.--Records fair except those for period of no gage-height record, which are poor. No known regulation or diversion above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--17 years, 18.8 ft^3/s (0.532 m^3/s), 1.17 in/yr (30 mm/yr), 13,620 acre-ft/yr (16.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66,900 ft^3/s (1,890 m^3/s) Aug. 3, 1978, gage height, 24.0 ft (7.315 m), from floodmarks, from rating curve extended above 7,400 ft^3/s (210 m^3/s) on basis of slope-area measurements of 20,100 and 66,900 ft^3/s (569 and 1,890 m^3/s); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft^3/s (28.3 m^3/s) and maximum (*):

Date	Time	Discharge		Gage height	
		(ft^3/s)	(m^3/s)	(ft)	(m)
May 15	1430	*5,030	142	6.49	1.978
Sept. 8	1500	2,740	77.6	5.18	1.579

Minimum discharge, 0.02 ft^3/s (0.001 m^3/s) July 11, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	.80	.81	2.9	2.8	1.9	2.5	4.5	5.5	.14	.17	.06
2	.90	.80	.91	2.6	2.7	1.7	2.6	4.8	5.0	.12	.14	.06
3	.80	.80	1.0	2.4	2.8	1.7	3.2	4.5	4.5	.08	.07	.06
4	.70	.80	1.2	2.3	2.7	2.0	3.1	4.8	3.9	.08	.08	.08
5	.64	.80	1.6	2.2	2.5	2.2	2.8	6.0	3.6	.06	.08	.09
6	.60	.80	1.7	2.1	2.4	2.2	2.5	6.0	3.2	.06	.05	.21
7	.55	.80	1.7	2.0	2.2	2.2	2.4	12	2.8	.05	.05	.94
8	.50	.80	1.7	1.9	2.9	2.6	2.1	16	2.5	.07	.05	560
9	.47	.80	1.7	1.9	4.0	2.5	2.2	21	6.5	.07	.05	67
10	.44	.80	1.7	2.1	4.0	2.6	2.2	13	7.1	.05	.10	18
11	.42	1.0	1.8	2.2	3.7	2.9	2.2	10	5.5	.04	.33	12
12	.42	1.0	4.2	2.2	2.7	4.6	2.3	8.7	4.0	.03	.16	9.2
13	.45	1.0	8.7	2.2	2.4	4.4	4.4	251	3.2	.06	.13	6.3
14	.47	1.0	6.2	2.2	2.2	3.2	7.8	59	2.2	.05	.13	4.6
15	.50	1.0	4.3	2.0	2.2	2.5	6.6	722	1.4	.09	.13	3.7
16	.50	1.0	3.2	1.9	3.1	2.5	4.7	151	.91	.11	.12	3.4
17	.50	1.0	2.5	1.9	4.0	2.5	3.8	48	.43	.06	.09	2.8
18	.50	1.0	2.5	1.9	4.3	2.5	3.8	23	.40	.06	.14	2.4
19	.50	1.0	2.8	1.9	3.7	2.5	3.6	86	.35	.06	.13	2.1
20	.50	1.0	2.8	2.1	3.0	2.4	3.6	37	.33	.06	.12	1.7
21	.50	.80	3.0	2.9	2.7	2.2	3.7	61	.28	.06	.09	1.5
22	.50	.80	4.0	11	2.4	2.0	4.0	28	.33	.08	.09	1.5
23	.50	.80	5.0	13	2.2	2.2	4.5	16	.52	.10	.11	1.4
24	.50	.80	8.6	6.9	1.9	2.2	4.5	12	.37	.09	.13	1.3
25	.50	.80	6.1	4.1	1.9	2.4	8.9	10	.30	.10	.12	2.2
26	.60	1.0	3.9	3.3	1.9	3.7	11	9.0	.21	.08	.09	5.4
27	.60	1.3	3.0	2.8	1.9	9.0	7.8	8.3	.21	.06	.09	6.9
28	.60	1.1	3.3	2.8	1.9	13	5.7	7.7	.22	.23	.09	10
29	.60	.98	4.8	2.8	1.9	6.0	4.8	7.1	.16	.26	.09	7.8
30	.60	.79	3.7	2.8	---	3.6	4.5	6.5	.14	.23	.09	8.2
31	.60	---	3.3	3.0	---	2.5	---	6.0	---	.18	.06	---
TOTAL	17.46	27.17	101.72	98.3	79.0	100.4	127.8	1659.9	66.06	2.87	3.37	740.90
MEAN	.56	.91	3.28	3.17	2.72	3.24	4.26	53.5	2.20	.093	.11	24.7
MAX	1.0	1.3	8.7	13	4.3	13	11	722	7.1	.26	.33	560
MIN	.42	.79	.81	1.9	1.9	1.7	2.1	4.5	.14	.03	.05	.06
AC-FT	35	54	202	195	157	199	253	3290	131	5.7	6.7	1470

CAL YR 1979 TOTAL 4795.63 MEAN 13.1 MAX 2210 MIN .20 AC-FT 9510
WTR YR 1980 TOTAL 3024.95 MEAN 8.26 MAX 722 MIN .03 AC-FT 6000

NOTE.--No gage-height record Oct. 1 to Nov. 26.

08151500 LLANO RIVER AT LLANO, TX

LOCATION.--Lat 30°45'04", long 98°40'10", Llano County, Hydrologic Unit 12090204, on right bank in Llano, 0.4 mi (0.6 km) downstream from bridge on State Highway 16, 7 mi (11 km) upstream from Little Llano River, and 24.2 mi (38.9 km) upstream from mouth.

DRAINAGE AREA.--4,233 mi² (10,963 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1939 to current year.

REVISED RECORDS.--WSP 1342: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 970.01 ft (295.659 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Many small diversions above station. Part of low flow of Llano River disappears into various formations, many of which are faulted, between stations near Junction and Llano. National Weather Service gage-height telemeter and rain gage at station.

AVERAGE DISCHARGE.--41 years, 359 ft³/s (10.17 m³/s), 1.15 in/yr (29 mm/yr), 260,100 acre-ft/yr (321 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 232,000 ft³/s (6,570 m³/s) Sept. 10, 1952, gage height, 32.6 ft (9.94 m), from rating curve extended above 129,000 ft³/s (3,650 m³/s) on basis of slope-area measurement of peak flow; no flow at times in 1952-56, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1879, 41.5 ft (12.65 m) June 14, 1935, discharge, 380,000 ft³/s (10,800 m³/s), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 7,500 ft³/s (212 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Sept. 8	1745	*210,000	5,950	31.11	9.482
Sept. 30	0815	13,100	371	10.35	3.155

Minimum discharge, 5.6 ft³/s (0.16 m³/s) July 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80	98	110	150	165	105	122	62	104	20	16	16
2	90	96	118	144	160	102	110	59	101	21	14	21
3	91	96	114	139	167	102	102	57	98	20	13	25
4	90	93	116	136	136	105	96	58	95	19	13	19
5	90	98	118	134	136	102	90	58	90	18	13	13
6	90	101	120	136	132	102	90	57	86	18	13	13
7	86	101	119	136	128	105	86	121	86	18	12	35
8	86	106	116	131	158	105	81	131	84	18	11	71200
9	86	106	116	131	173	105	77	163	690	17	12	19800
10	86	98	116	135	168	105	73	218	747	16	15	3020
11	86	98	118	141	159	105	77	128	343	14	23	1390
12	86	98	116	140	153	140	77	95	101	11	20	948
13	86	99	110	142	142	110	96	206	161	11	19	713
14	86	101	155	136	140	116	90	1260	112	9.0	27	581
15	89	101	150	138	125	105	86	2320	98	10	36	471
16	92	103	148	136	165	116	90	2220	92	11	45	606
17	96	108	143	136	157	105	90	765	81	9.8	50	353
18	96	114	139	136	144	98	86	514	73	8.3	45	296
19	96	116	136	136	151	98	81	606	69	7.3	36	257
20	96	122	136	138	165	98	77	510	69	9.0	33	222
21	93	131	136	142	150	96	73	971	63	8.7	26	186
22	88	128	137	207	136	96	69	661	68	9.6	26	150
23	89	118	168	218	122	96	68	393	113	16	22	129
24	89	116	173	211	122	90	66	279	92	11	23	112
25	88	116	166	222	116	96	76	230	71	9.5	21	122
26	96	110	169	186	116	96	62	179	69	9.7	15	164
27	96	110	158	170	116	131	61	150	58	11	14	200
28	96	111	171	159	116	106	60	130	51	16	13	284
29	93	113	162	155	116	175	59	118	39	15	10	258
30	103	110	155	150	---	159	59	114	30	13	19	5680
31	110	---	156	163	---	160	---	111	---	14	16	---
TOTAL	2909	3200	4367	4836	4001	3470	2430	12981	4094	416.7	677	107280
MEAN	93.8	107	141	156	138	112	81.0	419	136	13.4	21.8	3576
MAX	110	131	173	222	173	175	122	2320	747	21	50	71200
MIN	80	93	110	131	116	90	59	57	30	7.3	10	13
CFSM	.02	.03	.03	.04	.03	.03	.02	.10	.03	.003	.005	.84
IN.	.03	.03	.04	.04	.04	.03	.02	.11	.04	.00	.01	.94
AC-FT	5770	6350	8660	9590	7940	6880	4820	25750	8120	827	1340	212800

CAL YR 1979 TOTAL 105281.0 MEAN 288 MAX 7010 MIN 86 CFSM .07 IN .93 AC-FT 208800
WTR YR 1980 TOTAL 150661.7 MEAN 412 MAX 71200 MIN 7.3 CFSM .10 IN 1.32 AC-FT 298800

08151500 LLANO RIVER AT LLANO, TX --Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: April 1979 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1979 to current year.
WATER TEMPERATURES: April 1979 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 453 micromhos Sept. 21, 1980; minimum daily, 220 micromhos Sept. 8, 1980.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 453 micromhos Sept. 21; minimum daily, 220 micromhos Sept. 8.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 24...	0805	99	350	7.7	15.0	4.4	10.2	103	.6	140	180
NOV 07...	0900	101	360	8.1	13.0	1.4	10.3	99	.8	120	160
DEC 12...	0915	169	402	7.6	12.0	10	10.8	103	2.7	3800	>12000
JAN 08...	1605	131	400	7.9	9.5	--	12.6	114	.8	K5	37
FEB 06...	0830	140	401	7.4	9.0	1.7	12.2	108	.5	K5	45
MAR 04...	1530	114	405	8.0	14.0	20	11.4	115	.5	25	180
APR 08...	1045	55	405	8.1	20.5	1.9	10.7	122	.6	45	240
MAY 13...	0925	105	398	7.8	25.5	5.5	8.4	106	1.3	190	1000
JUN 10...	1645	649	234	7.6	26.0	20	7.8	99	1.2	340	170
JUL 08...	1150	23	366	7.9	31.0	6.5	8.5	116	1.0	80	400
AUG 12...	1500	30	387	8.2	32.0	4.7	8.0	111	1.4	80	170
SEP 11...	1045	1420	288	7.7	23.0	160	8.4	100	1.4	6000	820

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 24...	160	23	32	20	13	.4	2.3	170	0	13	20
NOV 07...	150	0	32	18	16	.5	2.1	190	0	12	19
DEC 12...	170	23	37	19	14	.5	2.1	180	0	14	22
JAN 08...	180	21	38	20	14	.5	1.7	190	0	12	21
FEB 06...	180	32	39	20	14	.5	1.8	180	0	18	25
MAR 04...	220	70	31	22	16	.4	1.9	180	0	19	25
APR 08...	180	28	34	22	15	.5	2.0	180	0	18	26
MAY 13...	160	18	30	20	17	.6	2.2	170	0	13	25
JUN 10...	89	7	21	8.8	8.7	.4	2.7	100	0	8.4	12
JUL 08...	150	16	26	20	17	.6	2.6	160	0	11	20
AUG 12...	130	13	20	19	21	.8	2.7	140	0	10	38
SEP 11...	120	16	37	7.4	6.5	.3	4.3	130	0	16	13

08151500 LLANO RIVER AT LLANO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)
OCT 24...	.3	14	205	199	.02	.02	.010	.020	.45	.35
NOV 07...	.2	10	213	201	.03	.04	.000	.040	.71	.35
DEC 12...	.2	7.9	208	205	.05	.05	.050	.050	.55	.55
JAN 08...	.2	7.8	211	209	.06	.07	.000	.000	.82	.73
FEB 06...	.1	7.8	218	215	.18	.18	.010	.030	.30	.32
MAR 04...	.2	6.8	206	229	.06	.06	.110	.110	.47	.47
APR 08...	.3	.2	210	207	.00	.01	.000	.010	.48	.86
MAY 13...	.3	14	210	206	.03	.02	.040	.070	.35	.28
JUN 10...	.2	11	134	122	.19	.23	.110	.120	.69	.35
JUL 08...	.5	22	222	208	.03	.02	.060	.060	3.4	.46
AUG 12...	.3	20	201	20	.00	.06	.010	.000	.95	.69
SEP 11...	.2	14	194	178	2.1	2.1	.020	.190	1.3	.80

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	CARBON, ORGANIC SUSPENDED (MG/L AS C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 24...	.46	.37	.020	.010	--	1.6	.1	10	2.7	97
NOV 07...	.71	.39	.000	.000	5.8	--	--	40	11	70
DEC 12...	.60	.60	.040	.070	4.5	--	--	24	11	94
JAN 08...	.82	.73	.390	.000	1.4	--	--	22	7.8	71
FEB 06...	.31	.35	.010	.040	--	5.5	.7	27	10	82
MAR 04...	.58	.58	.010	.000	1.4	--	--	9	2.8	60
APR 08...	.48	.87	.030	.030	2.0	--	--	209	31	7
MAY 13...	.39	.35	.030	.010	4.4	--	--	12	3.4	96
JUN 10...	.80	.47	.060	.030	--	7.8	.7	48	84	75
JUL 08...	3.5	.52	.020	.020	7.6	--	--	18	1.1	98
AUG 12...	.96	.69	.040	.010	--	8.3	.2	20	1.6	99
SEP 11...	1.3	.99	.180	.260	13	--	--	284	1090	58

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUSPENDED TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)
OCT 24...	0805	2	0	2	200	100	60	1	0	<1	0
NOV 07...	0900	--	--	--	--	--	--	--	--	--	--
JAN 08...	1605	--	--	--	--	--	--	--	--	--	--
FEB 06...	0830	1	0	1	0	0	60	1	0	<1	0
APR 08...	1045	--	--	--	--	--	--	--	--	--	--
JUN 10...	1445	1	0	1	0	0	40	2	--	<1	10
JUL 08...	1150	--	--	--	--	--	--	--	--	--	--
AUG 12...	1500	4	0	4	0	0	40	0	--	<1	0

08151500 LLANO RIVER AT LLANO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)
OCT											
24...	0	0	0	0	<3	0	0	0	130	120	<10
NOV											
07...	--	--	--	--	--	--	--	--	--	--	--
JAN											
08...	--	--	--	--	--	--	--	--	--	--	--
FEB											
06...	0	0	0	0	<3	0	0	0	120	110	<10
APR											
08...	--	--	--	--	--	--	--	--	--	--	--
JUN											
10...	10	0	0	--	<3	5	4	1	700	580	120
JUL											
08...	--	--	--	--	--	--	--	--	--	--	--
AUG											
12...	0	10	0	--	<3	8	8	0	350	--	<10

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI)
OCT											
24...	3	3	0	20	20	2	.3	.1	.2	3	3
NOV											
07...	--	--	--	--	--	--	--	--	--	--	--
JAN											
08...	--	--	--	--	--	--	--	--	--	--	--
FEB											
06...	5	5	0	20	20	<1	.2	.0	.3	2	2
APR											
08...	--	--	--	--	--	--	--	--	--	--	--
JUN											
10...	4	2	2	40	30	6	1.1	1.0	.1	7	4
JUL											
08...	--	--	--	--	--	--	--	--	--	--	--
AUG											
12...	4	4	0	20	20	2	1.1	1.0	.1	5	2

DATE	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
OCT										
24...	0	0	0	0	0	0	0	0	0	<3
NOV										
07...	--	--	--	--	0	--	--	--	--	--
JAN										
08...	--	--	--	--	0	--	--	--	--	--
FEB										
06...	0	0	0	0	0	0	0	10	7	<3
APR										
08...	--	--	--	--	0	--	--	--	--	--
JUN										
10...	3	0	0	0	0	0	0	10	--	<3
JUL										
08...	--	--	--	--	0	--	--	--	--	--
AUG										
12...	3	0	0	0	1	1	0	40	--	<3

DATE	LENGTH OF EXPOSURE (DAYS)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2)	CHLOR-B PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2)	BIOMASS CHLOROPHYLL RATIO PERIPHYTON (UNITS)
DEC						
12...	35	12.7	13.3	5.68	1.32	106
JAN						
08...	26	5.51	6.06	3.21	.250	171
FEB						
06...	29	2.20	2.68	3.57	.900	134
MAR						
04...	27	.790	1.02	.550	.170	418

08151500 LLANO RIVER AT LLANO, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	NOV 7,79		MAR 4,80		MAY 13,80		JUN 10,80	
TIME	0900		1530		0925		1445	
TOTAL CELLS/ML	160		240		1100		1300	
DIVERSITY: DIVISION	0.0		1.3		1.0		1.5	
.CLASS	0.0		1.3		1.0		1.5	
..ORDER	0.0		1.3		1.7		2.6	
...FAMILY	0.0		1.8		2.2		3.0	
....GENUS	0.0		1.8		2.3		3.1	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
....CHLORELLA	--	-	--	-	--	-	13	1
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	39	4	--	-
....TREUBARIA	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....SCENEDESMUS	--	-	--	-	100	10	280#	21
..TETRASPORALES								
...PALMELLACEAE								
....SPHAEROCYSTIS	--	-	--	-	--	-	13	1
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CARTERIA	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	--	-	14	6	580#	54	300#	22
....CHLOROGONIUM	--	-	--	-	--	-	--	-
..ZYGNEMATALES								
...DESMIDIACEAE								
....EUASTRUM	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	--	-	--	-	13	1	26	2
....MELOSIRA	--	-	--	-	52	5	170	13
..PENNALES								
...ACHNANTHACEAE								
....COCCONEIS	--	-	14	6	13	1	--	-
...CYMBELLACEAE								
....CYMBELLA	--	-	--	-	--	-	13	1
....RHOPALODIA	--	-	14	6	--	-	--	-
...FRAGILARIACEAE								
....FRAGILARIA	--	-	--	-	140	13	52	4
....SYNEDRA	--	-	--	-	39	4	--	-
...NAVICULACEAE								
....NAVICULA	--	-	--	-	77	7	52	4
...NITZSCHIACEAE								
....NITZSCHIA	160#	100	86#	35	13	1	170	13
...SURIRELLACEAE								
....SURIRELLA	--	-	--	-	--	-	13	1
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	--	-	--	-	13	1	90	7
..HORMOGONALES								
...OSCILLATORIACEAE								
....LYNGBYA	--	-	110#	47	--	-	--	-
....OSCILLATORIA	--	-	--	-	--	-	130	10
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	--	-	13	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
 * - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08151500 LLANO RIVER AT LLANO, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	JUL 8,80	AUG 12,80	SEP 11,80
TIME	1150	1500	1045
TOTAL CELLS/ML	2500	3400	96
DIVERSITY: DIVISION	0.9	1.1	1.0
.CLASS	0.9	1.1	1.0
..ORDER	1.2	1.3	1.8
...FAMILY	1.3	1.5	1.8
....GENUS	1.4	1.6	2.2

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...MICRACTINIACEAE						
....GOLENKINIA	39	2	39	1	--	-
....MICRACTINIUM	52	2	26	1	--	-
...OOCYSTACEAE						
....CHLORELLA	26	1	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	27#	29
....OOCYSTIS	--	-	--	-	14	14
....TETRAEDRON	--	-	--	-	--	-
....TREUBARIA	--	-	65	2	--	-
...SCENEDESMACEAE						
....SCENEDESMUS	150	6	230	7	--	-
..TETRASPORALES						
...PALMELLACEAE						
....SPHAEROCYSTIS	--	-	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CARTERIA	--	-	*	0	--	-
....CHLAMYDOMONAS	26	1	--	-	14	14
....CHLOROGONIUM	--	-	*	0	--	-
..ZYGNEMATALES						
...DESMIDIACEAE						
....EUASTRUM	--	-	*	0	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	--	-	52	2	27#	29
....MELOSIRA	--	-	26	1	--	-
..PENNALES						
...ACHNANTHACEAE						
....COCCONEIS	--	-	--	-	--	-
...CYMBELLACEAE						
....CYMBELLA	--	-	--	-	--	-
....RHOPALODIA	--	-	--	-	--	-
...FRAGILARIACEAE						
....FRAGILARIA	52	2	250	7	--	-
....SYNEDRA	13	1	--	-	--	-
...NAVICULACEAE						
....NAVICULA	--	-	*	0	--	-
...NITZSCHIACEAE						
....NITZSCHIA	26	1	39	1	14	14
...SURIRELLACEAE						
....SURIRELLA	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOMONADACEAE						
....CRYPTOMONAS	39	2	39	1	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	120	5	39	1	--	-
..HORMOGONALES						
...OSCILLATORIACEAE						
....LYNGBYA	--	-	--	-	--	-
....OSCILLATORIA	1900#	78	2600#	75	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08151500 LLANO RIVER AT LLANO, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	2909	368	202	1580	23	177	14	112	160
NOV.	1979	3200	386	209	1810	24	210	15	130	170
DEC.	1979	4347	401	215	2520	26	302	16	185	170
JAN.	1980	4826	402	215	2810	26	337	16	206	170
FEB.	1980	4001	404	216	2340	26	282	16	172	170
MAR.	1980	3478	395	213	2000	25	236	15	146	170
APR.	1980	2430	393	212	1390	25	164	15	101	170
MAY	1980	12981	296	168	5900	16	574	11	395	130
JUNE	1980	4094	314	177	1960	18	196	12	133	130
JULY	1980	416.7	360	198	223	22	24	14	16	150
AUG.	1980	677	360	198	363	22	40	14	26	150
SEPT	1980	107280	236	139	40400	12	3370	8.8	2540	100
TOTAL		150639.7	**	**	63200	**	5910	**	4170	**
WTD. AVG.		412	271	155	**	15	**	10	**	110

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	366	349	412	398	415	390	392	383	376	359	353	360
2	367	352	404	400	413	394	395	385	375	361	355	351
3	366	363	402	402	412	396	397	383	377	363	358	346
4	368	371	401	403	408	405	400	388	378	362	359	350
5	370	375	398	405	407	400	401	390	380	361	358	353
6	369	378	410	401	408	396	396	392	382	362	357	357
7	371	360	408	404	409	393	391	364	381	363	360	344
8	373	382	410	401	406	392	396	361	383	363	364	220
9	372	384	413	403	405	393	398	379	273	361	363	228
10	372	385	412	402	407	393	397	380	250	364	360	244
11	370	386	415	399	411	395	395	375	330	363	362	300
12	371	388	397	401	409	390	389	379	336	365	364	339
13	372	390	388	404	411	391	392	371	330	364	367	375
14	372	388	397	399	405	388	391	305	320	361	359	407
15	374	389	399	395	406	392	393	221	316	362	363	425
16	375	390	398	396	400	390	394	240	312	363	359	438
17	375	388	403	397	401	395	396	315	305	365	360	445
18	376	391	406	398	407	400	393	330	300	364	361	446
19	377	390	409	399	403	410	390	346	296	366	364	450
20	376	390	407	396	399	400	392	336	300	363	362	452
21	378	392	408	402	396	397	393	258	309	358	363	453
22	369	391	406	397	397	399	396	322	315	361	359	452
23	367	395	390	393	395	398	398	345	331	363	360	451
24	370	396	385	399	394	400	394	346	349	352	362	446
25	373	397	392	400	396	398	389	361	354	353	364	448
26	371	398	388	402	394	397	386	368	356	354	363	440
27	372	399	400	405	393	396	385	373	358	355	360	438
28	373	398	396	416	391	398	387	371	359	350	359	430
29	372	397	397	415	392	389	389	375	358	351	351	433
30	325	400	399	414	---	386	388	377	357	357	354	260
31	340	---	400	413	---	388	---	376	---	355	359	---
MEAN	369	385	402	402	403	395	393	351	338	360	360	383

08151500 LLANO RIVER AT LLANO, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.0	16.0	8.0	---	---	11.0	---	25.0	29.0	---	---	33.0
2	27.0	16.0	11.0	12.0	---	---	---	---	---	---	---	---
3	26.0	16.0	---	11.0	9.0	10.0	---	25.0	---	---	32.0	32.0
4	24.0	17.0	---	10.0	12.0	---	20.0	24.0	29.0	---	32.0	31.0
5	---	17.0	9.0	10.0	13.0	15.0	19.0	---	---	---	33.0	---
6	---	16.0	12.0	12.0	13.0	16.0	22.0	---	---	---	33.0	---
7	---	---	11.0	11.0	12.0	17.0	24.0	---	---	---	---	29.0
8	25.0	16.0	12.0	---	10.0	---	22.0	25.0	29.0	---	---	---
9	29.0	---	12.0	10.0	6.0	17.0	21.0	25.0	27.0	---	---	25.0
10	23.0	15.0	---	11.0	---	17.0	---	26.0	29.0	---	30.0	28.0
11	23.0	14.0	---	---	7.0	18.0	23.0	28.0	30.0	---	29.0	28.0
12	---	14.0	13.0	10.0	9.0	19.0	14.0	29.0	30.0	---	29.0	30.0
13	23.0	13.0	9.0	12.0	12.0	18.0	12.0	24.0	---	---	---	---
14	24.0	13.0	9.0	14.0	15.0	---	15.0	23.0	---	---	29.0	30.0
15	24.0	13.0	11.0	16.0	---	17.0	19.0	22.0	31.0	---	---	29.0
16	25.0	14.0	9.0	16.0	10.0	19.0	21.0	---	31.0	---	30.0	28.0
17	25.0	---	---	---	8.0	---	---	24.0	32.0	---	29.0	29.0
18	25.0	---	13.0	15.0	10.0	15.0	23.0	---	32.0	---	---	29.0
19	---	19.0	14.0	---	---	16.0	24.0	26.0	32.0	---	---	28.0
20	25.0	20.0	---	15.0	17.0	18.0	---	28.0	---	---	---	28.0
21	---	17.0	---	13.0	17.0	18.0	23.0	25.0	31.0	---	---	---
22	23.0	13.0	14.0	10.0	16.0	---	---	26.0	---	---	---	---
23	20.0	11.0	---	9.0	16.0	18.0	24.0	24.0	32.0	---	---	29.0
24	19.0	---	---	10.0	17.0	18.0	24.0	30.0	33.0	---	---	30.0
25	19.0	12.0	13.0	11.0	---	16.0	25.0	32.0	---	---	---	29.0
26	---	13.0	---	---	15.0	16.0	20.0	31.0	---	---	---	26.0
27	---	15.0	14.0	10.0	18.0	---	---	30.0	---	---	---	26.0
28	---	13.0	14.0	7.0	18.0	18.0	24.0	28.0	---	---	---	25.0
29	23.0	9.0	---	6.0	---	19.0	---	29.0	---	32.0	30.0	25.0
30	---	7.0	---	7.0	---	---	24.0	---	---	32.0	32.0	27.0
31	---	---	14.0	7.0	---	18.0	---	29.0	---	32.0	33.0	---
MEAN	24.0	14.5	11.5	11.0	12.5	16.5	21.0	26.5	30.5	32.0	31.0	28.5

08152000 SANDY CREEK NEAR KINGSLAND, TX

LOCATION.--Lat 30°33'30", long 98°28'19", Llano County, Hydrologic Unit 12090201, on left bank at downstream side of bridge on State Highway 71, 3.9 mi (6.3 km) upstream from Lake Lyndon B. Johnson, and 7.3 mi (11.7 km) south of Kingsland.

DRAINAGE AREA.--327 mi^2 (847 km^2).

PERIOD OF RECORD.--October 1966 to current year.
Water-quality records: Sediment records: January 1968 to September 1975.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 862.31 ft (262.832 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Some diversions above station for irrigation, amount unknown. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--14 years, 65.2 ft^3/s (1.846 m^3/s), 2.71 in/yr (69 mm/yr), 47,240 acre-ft/yr (58.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,000 ft^3/s (765 m^3/s) Sept. 8, 1978, gage height, 17.20 ft (5.243 m), from floodmark; no flow at times most years

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of Sept. 11, 1952, which was the highest since at least 1881, reached a stage of 34.2 ft (10.42 m), discharge 163,000 ft^3/s (4,620 m^3/s), from slope-area measurement at gage site.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft^3/s (70.8 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 13	2030	3,150	89.2	8.59	2.618
May 15	1600	*4,670	132	9.54	2.908
Sept. 9	0200	3,720	105	8.96	2.731

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	5.5	5.7	18	21	9.3	16	6.1	13	.18	.01	.00
2	2.2	5.1	5.7	16	20	9.1	16	5.4	12	.04	.00	.36
3	1.9	5.9	5.7	15	20	9.6	18	4.9	11	.03	.00	.30
4	1.7	5.5	6.1	14	19	10	13	5.3	9.8	.04	.00	.02
5	1.3	5.0	6.5	13	20	9.3	12	4.9	8.5	.04	.01	.00
6	1.0	4.9	6.5	12	20	10	11	4.9	7.3	.04	.00	2.3
7	.93	4.7	6.5	12	21	11	11	19	6.9	.04	.00	10
8	1.0	4.7	6.5	12	25	11	8.8	70	5.9	.04	.00	20
9	1.1	4.6	7.0	11	28	11	7.8	50	15	.04	.00	1210
10	.89	4.3	7.0	11	25	12	7.3	25	25	.07	.00	162
11	.91	4.3	8.3	11	23	11	7.8	17	14	.00	.00	49
12	1.2	4.0	15	9.8	21	13	14	17	11	.00	.00	29
13	1.3	4.2	19	10	20	10	23	985	8.7	.00	.00	19
14	1.4	4.3	18	9.8	18	9.2	22	519	7.6	.01	.00	13
15	1.8	4.7	15	10	18	9.3	17	1380	6.1	.01	.00	9.8
16	2.4	5.0	12	10	26	10	13	849	4.9	.01	.00	7.6
17	2.1	5.4	10	10	24	9.5	10	252	3.7	.01	.07	6.1
18	2.2	7.9	9.3	10	24	8.0	8.4	129	3.7	.03	.00	4.6
19	1.8	7.9	9.3	10	22	8.4	8.0	155	3.1	.15	.64	3.6
20	1.6	7.4	9.3	12	20	9.0	7.8	130	2.5	.09	.93	2.6
21	1.3	9.8	10	13	18	8.2	7.6	634	2.0	.05	.61	1.9
22	1.4	8.8	13	59	16	8.3	7.4	244	1.8	.33	.32	1.7
23	1.7	7.4	19	93	14	8.5	7.1	84	1.6	.31	.17	1.5
24	1.3	6.5	20	43	14	8.1	7.0	50	1.4	.22	.08	1.4
25	1.1	7.9	17	33	13	17	62	49	1.2	.23	.06	2.0
26	1.1	7.4	14	27	12	16	21	38	1.2	.30	.02	3.8
27	1.3	6.5	13	23	11	29	15	30	1.0	.36	.00	13
28	1.7	6.1	16	21	11	41	12	26	.82	.31	.00	15
29	1.9	6.1	34	21	11	30	8.8	21	.63	.09	.00	24
30	7.6	5.7	29	22	---	22	6.9	18	.46	.05	.00	24
31	8.7	---	24	22	---	17	---	15	---	.01	.00	---
TOTAL	60.13	177.5	397.4	613.6	555	404.8	406.7	5837.5	191.81	3.13	2.92	1637.58
MEAN	1.94	5.92	12.8	19.8	19.1	13.1	13.6	188	6.39	.10	.094	54.6
MAX	8.7	9.8	34	93	28	41	62	1380	25	.36	.93	1210
MIN	.89	4.0	5.7	9.8	11	8.0	6.9	4.9	.46	.00	.00	.00
CFSM	.006	.02	.04	.06	.06	.04	.04	.58	.02	.000	.000	.17
IN.	.01	.02	.05	.07	.06	.05	.05	.66	.02	.00	.00	.19
AC-FT	119	352	788	1220	1100	803	807	11580	380	6.2	5.8	3250

CAL YR 1979 TOTAL 43299.73 MEAN 119 MAX 5080 MIN .89 CFSM .36 IN 4.93 AC-FT 85880
WTR YR 1980 TOTAL 10288.07 MEAN 28.1 MAX 1380 MIN .00 CFSM .09 IN 1.17 AC-FT 20410

08152900 PEDERNALES RIVER NEAR FREDERICKSBURG, TX

LOCATION.--Lat 30°13'13", long 98°52'10", Gillespie County, Hydrologic Unit 12090206, on left bank at downstream side of bridge on U.S. Highway 87, 2.0 mi (3.2 km) upstream from Mueseback Creek, and 3.8 mi (6.1 km) south of Fredericksburg.

DRAINAGE AREA.--369 mi^2 (956 km^2).

PERIOD OF RECORD.--July 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,564.96 ft (477.000 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. No known regulation or diversions above station. Several observations of water temperature were obtained during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,600 ft^3/s (102 m^3/s) May 15, 1980, at 1645 hours, gage height, 13.59 ft (4.142 m); minimum, 1.1 ft^3/s (0.031 m^3/s) at times each day Aug. 4-6, 1980, gage height, 4.08 ft (1.244 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of Aug. 2, 1978, which is the highest since 1907, reached a stage of 41.6 ft (12.68 m), discharge not known. The highest known discharge was 64,000 ft^3/s (1.810 m^3/s) June 1, 1979, gage height, 34.4 ft (10.49 m), from floodmark, from rating curve extended above a discharge measurement of 42,300 ft^3/s (1,200 m^3/s) June 1, 1979.

EXTREMES FOR PERIOD JULY TO SEPTEMBER 1979.--Maximum discharge during period, 1,410 ft^3/s (39.9 m^3/s) Aug. 9 at 0745 hours, gage height, 9.11 ft (2.777 m), no peak above base of 1,500 ft^3/s (42.5 m^3/s); minimum, 17 ft^3/s (0.48 m^3/s) Sept. 30, gage height, 4.45 ft (1.356 m).

EXRTREMES FOR CURRENT YEAR.--Maximum discharge, 3,600 ft^3/s (102 m^3/s) May 15 at 1645 hours, gage height, 13.59 ft (4.142 m), no other peak above base of 1,500 ft^3/s (42.5 m^3/s); minimum, 1.1 ft^3/s (0.031 m^3/s) at times each day Aug. 4-6, gage height, 4.08 ft (1.244 m).

DISCHARGE, IN CUBIC FEET PER SECOND, JUNE TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									---	76	42	34
2									---	71	50	33
3										69	50	31
4									---	67	46	30
5									---	65	40	30
6									---	67	37	29
7									---	72	36	28
8									---	71	33	28
9									---	62	340	28
10									---	61	89	27
11									---	63	296	25
12									---	56	258	24
13									---	52	92	23
14									---	50	69	22
15									---	48	59	21
16									---	44	53	21
17									---	42	51	21
18									---	54	48	22
19									---	108	45	26
20									---	90	43	26
21									---	66	42	25
22									---	56	42	23
23									---	47	130	22
24									---	45	73	21
25									---	42	49	20
26									---	38	44	20
27									---	197	42	20
28									91	90	38	19
29									87	53	37	19
30									80	46	36	18
31									---	42	36	---
TOTAL									---	2010	2346	736
MEAN									---	64.8	75.7	24.5
MAX									---	197	340	34
MIN									---	38	33	18
AC-FT									---	3990	4650	1460

WTR YR 1979 TOTAL - MEAN - MAX - MIN - AC-FT -

08152900 PEDERNALES RIVER NEAR FREDERICKSBURG, TX--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	22	20	27	22	19	23	29	16	4.0	1.9	2.3
2	17	18	20	28	23	17	26	24	14	3.8	1.8	2.1
3	17	18	20	26	23	17	25	20	13	3.7	1.4	2.3
4	16	18	21	25	22	18	23	19	13	3.4	1.3	2.3
5	15	17	20	24	23	18	23	18	13	3.0	1.2	2.2
6	15	17	20	24	22	18	22	17	12	3.0	1.3	3.5
7	15	17	20	24	21	19	21	19	12	3.1	1.6	113
8	16	18	19	23	23	19	21	167	11	2.9	1.7	351
9	15	18	19	23	23	18	20	51	11	3.0	1.5	172
10	14	17	20	23	22	19	20	29	30	2.4	1.8	61
11	14	18	21	24	22	18	20	25	22	2.1	3.6	37
12	15	18	31	24	22	20	21	23	15	2.1	3.9	26
13	16	18	37	24	22	18	24	20	12	1.9	3.7	21
14	16	18	31	24	23	17	24	22	11	1.9	3.3	17
15	17	18	27	23	23	17	23	673	9.3	1.7	2.6	15
16	17	19	24	24	26	18	21	229	8.7	1.7	2.3	14
17	18	20	22	24	26	18	20	77	7.7	1.7	3.3	12
18	17	24	21	27	28	16	19	51	7.2	1.7	5.1	11
19	17	25	21	27	27	16	18	62	6.8	1.6	4.2	10
20	17	25	22	26	24	16	19	48	6.6	1.8	4.3	10
21	16	28	22	26	22	15	19	70	6.7	1.8	3.4	9.6
22	16	30	23	28	21	15	19	45	7.9	1.9	3.1	9.5
23	16	24	29	27	21	15	19	34	6.3	2.4	2.6	8.8
24	16	23	32	26	21	15	18	30	5.7	2.1	2.3	8.4
25	16	27	29	24	20	17	56	27	5.4	2.0	2.2	9.7
26	17	26	26	24	20	19	29	24	5.3	1.8	1.9	15
27	18	24	26	22	19	35	23	23	5.1	1.8	1.8	19
28	17	21	31	21	19	50	20	21	5.0	1.8	1.9	17
29	18	20	52	22	20	33	20	19	4.5	1.8	3.0	17
30	24	19	39	23	---	26	18	18	4.0	1.8	4.3	18
31	36	---	31	23	---	23	---	17	---	1.9	2.8	---
TOTAL	531	625	796	760	650	619	674	1951	307.2	71.6	81.1	1016.7
MEAN	17.1	20.8	25.7	24.5	22.4	20.0	22.5	62.9	10.2	2.31	2.62	33.9
MAX	36	30	52	28	28	50	56	673	30	4.0	5.1	351
MIN	14	17	19	21	19	15	18	17	4.0	1.6	1.2	2.1
AC-FT	1050	1240	1580	1510	1290	1230	1340	3870	609	142	161	2020

CAL YR 1979 TOTAL - MEAN - MAX - MIN - AC-FT -
WTR YR 1980 TOTAL 8082.6 MEAN 22.1 MAX 673 MIN 1.2 AC-FT 16030

08153500 PEDERNALES RIVER NEAR JOHNSON CITY, TX

LOCATION.--Lat 30°17'27", long 98°24'01", Blanco County, Hydrologic Unit 12090206, near center of span at downstream side of bridge on U.S. Highway 281, 0.2 mi (0.3 km) downstream from Towhead Creek, 1.1 mi (1.8 km) northeast of Johnston City, 3.4 mi (5.5 km) downstream from Buffalo Creek, and 48.2 mi (77.6 km) upstream from mouth.

DRAINAGE AREA.--947 mi^2 (2,453 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1939 to current year.

REVISED RECORDS.--WSP 1632: 1953(M), 1957, 1958(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,096.70 ft (334.274 m) National Geodetic Vertical Datum of 1929. May 4 to Sept. 13, 1939, nonrecording gage, and Sept. 14, 1939, to Sept. 10, 1952, water-stage recorder at upstream side of bridge at same datum. Sept. 11, 1952, to June 29, 1953, nonrecording gage, and June 30, 1953, to Oct. 7, 1954, water-stage recorder at site 360 ft (110 m) downstream at same datum.

REMARKS.--Water-discharge records good. Some diversions above station for irrigation. During year, the city of Fredericksburg discharged about 979 acre-ft (1.21 hm^3) of sewage effluent into the river. Records furnished by the city of Johnson City show that 170 acre-ft (210,000 m^3) was diverted from pool at gage and 66.9 acre-ft (82,500 m^3) of treated sewage effluent was returned to the river below gage. Flow is affected at times by discharge from the flood-detention pools of four floodwater-retarding structures with a combined detention capacity of 4,580 acre-ft (5.65 hm^3). These structures control runoff from 15.6 mi^2 (40.4 km^2) in the Williamson Creek drainage basin. Corps of Engineers gage-height telemeter and National Weather Service rain-gage telemeter at station.

AVERAGE DISCHARGE.--41 years (water years 1940-80), 178 ft^3/s (5.041 m^3/s), 128,960 acre-ft/yr (159 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 441,000 ft^3/s (12,500 m^3/s) Sept. 11, 1952, gage height, 42.5 ft (12.95 m), from floodmark, from rating curve extended above 116,000 ft^3/s (3,290 m^3/s) on basis of slope-area measurement of 441,000 ft^3/s (12,500 m^3/s); no flow at times in 1951-52, 1954, 1956-57, 1963-64, 1967-68, 1971.

Maximum stage since at least 1859, 42.5 ft (12.95 m) Sept. 11, 1952.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1869 reached a stage of 33 ft (10.1 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,790 ft^3/s (79.0 m^3/s) May 16 at 0500 hours, gage height, 11.60 ft (3.536 m), no peak above base of 4,100 ft^3/s (116 m^3/s); minimum daily, 1.2 ft^3/s (0.034 m^3/s) Aug. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	48	48	75	52	51	80	101	56	13	2.5	2.4
2	47	57	48	71	57	51	80	88	53	13	1.9	2.4
3	45	52	51	63	57	47	74	72	51	11	1.5	2.3
4	41	50	50	63	57	44	67	61	47	8.5	1.3	2.2
5	40	48	51	57	54	44	63	56	45	7.2	1.3	2.3
6	40	46	48	59	54	48	63	51	44	6.4	1.2	3.5
7	41	45	50	54	61	50	60	61	42	6.0	1.4	55
8	42	47	51	56	75	50	57	90	40	5.8	1.4	358
9	42	46	50	57	69	51	54	433	40	5.6	1.3	681
10	40	44	50	57	71	51	51	141	40	4.9	2.5	270
11	40	47	53	53	67	51	52	91	40	4.4	8.3	117
12	41	45	61	51	64	45	64	77	42	3.7	13	75
13	43	45	73	54	64	43	72	90	42	3.1	11	54
14	43	45	81	53	64	47	80	111	35	2.9	6.1	46
15	45	45	74	55	64	48	73	104	31	2.4	4.1	40
16	45	45	61	54	69	51	63	950	29	2.2	4.3	36
17	45	47	54	55	77	45	58	259	27	2.0	8.7	33
18	45	57	57	56	84	45	52	147	26	1.8	16	31
19	45	75	57	57	74	45	51	136	24	1.5	8.4	30
20	45	70	56	60	73	45	51	130	23	1.6	7.2	28
21	42	84	57	72	62	45	51	464	23	1.5	6.2	27
22	42	66	64	64	64	45	49	273	23	1.7	5.3	27
23	40	65	69	64	61	45	48	143	27	4.9	4.9	26
24	41	61	68	63	59	45	52	114	24	5.6	4.8	27
25	43	57	73	60	57	50	65	99	21	4.2	4.7	27
26	44	57	66	56	57	51	91	87	20	3.0	4.0	35
27	45	60	64	51	53	223	80	79	18	2.4	3.5	56
28	45	53	71	57	51	241	63	72	17	2.8	2.6	61
29	45	52	89	57	50	133	56	69	15	3.2	6.3	146
30	47	51	108	56	---	102	51	64	14	3.4	19	75
31	48	---	89	54	---	87	---	62	---	3.0	4.3	---
TOTAL	1346	1610	1942	1814	1821	2019	1871	4775	979	142.7	169.0	2376.1
MEAN	43.4	53.7	62.6	58.5	62.8	65.1	62.4	154	32.6	4.60	5.45	79.2
MAX	49	84	108	75	84	241	91	950	56	13	19	681
MIN	40	44	48	51	50	43	48	51	14	1.5	1.2	2.2
AC-FT	2670	3190	3850	3600	3610	4000	3710	9470	1940	283	335	4710

CAL YR 1979 TOTAL 129707.0 MEAN 355 MAX 16700 MIN 40 AC-FT 257300
WTR YR 1980 TOTAL 20864.8 MEAN 57.0 MAX 950 MIN 1.2 AC-FT 41390

08153500 PEDERNALES RIVER NEAR JOHNSON CITY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: April 1948 to September 1950, October 1971 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	TEMPER-ATURE, WATER (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT 24...	0931	39	741	16.0	250	28	32	42	50
DEC 05...	1140	49	727	12.0	280	50	38	45	50
JAN 16...	0915	53	709	15.0	290	56	42	44	43
FEB 27...	1105	49	685	14.5	250	39	35	40	40
APR 09...	1054	52	637	21.0	250	45	34	40	39
MAY 21...	0940	142	414	25.0	180	26	38	21	17
JUL 02...	0915	9.8	753	28.5	250	41	31	43	57
AUG 06...	0920	2.7	827	25.5	290	60	31	51	67
SEP 24...	0935	16	470	26.0	170	19	27	26	26

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3'	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 24...	1.4	3.5	250	12	44	82	.4	6.1	395
DEC 05...	1.3	3.1	280	0	41	81	.4	2.9	399
JAN 16...	1.1	3.1	280	0	40	72	.4	1.5	384
FEB 27...	1.1	2.6	260	0	57	73	.3	.8	377
APR 09...	1.1	3.2	250	0	37	69	.3	3.2	349
MAY 21...	.6	2.9	190	0	19	26	.5	11	229
JUL 02...	1.6	4.3	260	0	38	91	.4	21	414
AUG 06...	1.7	4.5	280	0	45	110	.5	28	475
SEP 24...	.9	3.4	190	0	24	43	.3	12	255

08154500 LAKE TRAVIS NEAR AUSTIN, TX

LOCATION.--Lat 30°23'29", long 97°54'24", Travis County, Hydrologic Unit 12090205, in powerhouse at Mansfield Dam on Colorado River, 7.3 mi (11.7 km) downstream from Sandy Creek, 12 mi (19 km) northwest of Austin, and at mile 318.0 (511.7 km).

DRAINAGE AREA.--38,130 mi² (98,760 km²), approximately, of which 12,880 mi² (33,360 km²) probably is noncontributing.

PERIOD OF RECORD.--September 1940 to current year. Prior to October 1948, published as Marshall Ford Reservoir near Austin.

REVISED RECORDS.--WSP 1342: Drainage area.

GAGE.--Nonrecording gage. Datum of gage is 0.12 ft (0.037 m) National Geodetic Vertical Datum of 1929 (levels
by Bureau of Reclamation). Prior to Dec. 26, 1940, staff gages on left bank near dam, datum is NGVD, unad-
justed. Dec. 26, 1940, to February 1942, mercury manometer in powerhouse, datum is NGVD, unadjusted.

REMARKS.--The lake is formed by a 7,098-foot-long (2,163 m) concrete gravity, earth, and rockfill dam. Storage
began Sept. 9, 1940, and dam was completed in early 1942. Capacity curve is based on October 1939 survey.
Capacity between gage heights 681.0 and 714.0 ft (207.57 and 217.63 m) is 778,000 acre-ft (959 hm³) and is
reserved for flood control. Water is used for power development and for irrigation below Columbus. For
statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station
08153500. Figures given herein represent total contents. Data regarding the dam and lake are given in the
following table:

	Gage height (feet)	Capacity (acre-feet)
	750.1	-
Top of dam (roadway)..	748.9	3,223,000
Design flood..	714.0	1,950,000
Crest of spillway..	681.0	1,172,000
Top of power storage..	535.8	27,900
Lowest gated outlet (invert)..		

COOPERATION.--Records of daily gage heights and capacity curve furnished by Lower Colorado River Authority.

EXTREMES (at 2400) FOR PERIOD OF RECORD.--Maximum contents, 1,770,000 acre-ft (2.18 km³) May 18, 1957, gage height, 707.4 ft (215.62 m); minimum, 332,600 acre-ft (410 hm³) Aug. 13, 14, 1951, gage height, 614.2 ft (187.21 m).

EXTREMES (at 2400) FOR CURRENT YEAR.--Maximum contents, 1,084,000 acre-ft (1.34 km³) May 25, 27; maximum gage height, 676.22 ft (206.112 m) May 25; minimum discharge, 801,600 acre-ft (988 hm³) Sept. 6, gage height, 658.42 ft (200.686 m).

Capacity table (gage height, in feet, and total contents, in acre-feet)

658.0	795,500	670.0	976,900
660.0	824,700	675.0	1,062,000
665.0	899,700	680.0	1,152,000

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1014000	1004000	1013000	1022000	1037000	1036000	1035000	1016000	1076000	1019000	928500	825800
2	1013000	1004000	1013000	1024000	1038000	1036000	1035000	1016000	1075000	1015000	925800	820600
3	1011000	1004000	1012000	1025000	1038000	1035000	1036000	1016000	1072000	1011000	921700	815100
4	1009000	1003000	1012000	1025000	1038000	1036000	1035000	1016000	1070000	1006000	917200	810300
5	1008000	1005000	1012000	1025000	1039000	1035000	1034000	1016000	1069000	1002000	915200	805700
6	1008000	1004000	1012000	1025000	1038000	1035000	1035000	1017000	1066000	996000	913700	801600
7	1008000	1004000	1012000	1025000	1040000	1035000	1035000	1021000	1063000	992000	911200	802300
8	1008000	1004000	1012000	1026000	1045000	1036000	1032000	1031000	1063000	987800	908900	877200
9	1008000	1004000	1012000	1026000	1045000	1035000	1031000	1030000	1061000	985000	910400	1004000
10	1008000	1004000	1012000	1026000	1045000	1035000	1028000	1028000	1059000	982100	911800	1016000
11	1008000	1003000	1012000	1026000	1045000	1035000	1028000	1027000	1058000	979300	908600	1013000
12	1006000	1003000	1013000	1025000	1045000	1036000	1032000	1028000	1056000	977200	904100	1012000
13	1006000	1003000	1013000	1025000	1045000	1036000	1032000	1034000	1056000	974600	899400	1014000
14	1006000	1003000	1013000	1025000	1045000	1035000	1029000	1039000	1054000	970500	896600	1011000
15	1006000	1003000	1013000	1027000	1045000	1035000	1028000	1055000	1054000	967000	893800	1009000
16	1005000	1003000	1013000	1027000	1047000	1035000	1024000	1068000	1049000	965100	889100	1007000
17	1006000	1003000	1012000	1029000	1047000	1034000	1020000	1071000	1049000	963300	885600	1003000
18	1006000	1003000	1012000	1029000	1047000	1034000	1018000	1073000	1048000	959700	884000	1003000
19	1006000	1003000	1013000	1029000	1047000	1033000	1019000	1076000	1044000	957200	880200	1003000
20	1006000	1003000	1012000	1029000	1047000	1032000	1019000	1079000	1043000	954400	876800	1002000
21	1006000	1008000	1014000	1030000	1048000	1031000	1020000	1079000	1039000	951900	874200	1001000
22	1006000	1007000	1014000	1034000	1047000	1030000	1021000	1082000	1036000	948200	872100	1002000
23	1005000	1009000	1014000	1033000	1048000	1029000	1018000	1083000	1035000	944800	870000	1001000
24	1004000	1014000	1014000	1033000	1049000	1028000	1019000	1083000	1033000	942800	864800	1000000
25	1004000	1015000	1015000	1033000	1045000	1027000	1021000	1084000	1030000	943000	860300	1000000
26	1003000	1017000	1014000	1034000	1038000	1028000	1020000	1083000	1031000	940900	856700	997100
27	1003000	1014000	1017000	1035000	1035000	1036000	1018000	1084000	1028000	938900	852600	1011000
28	1003000	1014000	1019000	1035000	1036000	1036000	1017000	1083000	1025000	937700	650100	1017000
29	1003000	1013000	1022000	1036000	1036000	1037000	1015000	1082000	1023000	935700	844200	1026000
30	1004000	1013000	1021000	1036000	---	1036000	1015000	1079000	1019000	935400	838700	1036000
31	1004000	---	1023000	1037000	---	1036000	---	1078000	---	932300	831500	---
MAX	1014000	1017000	1023000	1037000	1049000	1037000	1036000	1084000	1076000	1019000	928500	1036000
MIN	1003000	1003000	1012000	1022000	1035000	1027000	1015000	1016000	1019000	932300	831500	801600
(†)	671.68	672.22	672.80	673.60	673.55	673.52	672.35	675.89	672.55	667.12	660.45	673.54
(‡)	-13000	+9000	+10000	+14000	-1000	0	-21000	+63000	-59000	-86700	-100800	+204500

CAL YR 1979	MAX	1221000	MIN	873200	‡	157000
WTR YR 1980	MAX	1084000	MIN	801600	‡	19000

† Gage height, in feet, at end of month.
‡ Change in contents, in acre-feet.

[illegible] COLORADO RIVER BELOW MANSFIELD DAM, AUSTIN, TX

LOCATION.--Lat [illegible], long [illegible], Travis County, Hydrologic Unit [illegible], on the downstream side of Mansfield Dam, [illegible] mi ([illegible] km) northwest of the State Capitol at Austin, and at mile [illegible] ([illegible] km).

DRAINAGE AREA.--[illegible] mi² ([illegible] km²), approximately, of which [illegible] mi² ([illegible] km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October [illegible] to current year.

GAGE.--None. Daily discharge record is based on daily releases from Lake Travis.

REMARKS.--Water-discharge records fair.

COOPERATION.--All records of releases were furnished by the Lower Colorado River Authority.

AVERAGE DISCHARGE.--[illegible] years, [illegible] ft³/s ([illegible] m³/s), [illegible] acre-ft/yr ([illegible] hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, [illegible] ft³/s ([illegible] m³/s) Apr. [illegible], 19[illegible]; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, [illegible] ft³/s ([illegible] m³/s) Feb. [illegible]; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER [illegible] TO SEPTEMBER [illegible]
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

08154510 COLORADO RIVER BELOW MANSFIELD DAM, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: June to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM-ICAL, 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
JUN 11...	1130	580	7.5	16.0	7.2	71	.8	190	27	61
JUL 28...	0910	607	7.6	15.0	5.8	57	.6	190	47	61
AUG 13...	1210	605	7.2	16.0	3.6	37	--	180	27	61
SEP 15...	1540	521	7.6	21.0	3.3	37	.5	190	31	60

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
JUN 11...	22	25	.8	3.3	180	0	29	43	.3
JUL 28...	21	25	.8	3.4	180	0	29	42	.3
AUG 13...	20	25	.8	3.1	180	0	30	44	.3
SEP 15...	21	26	.8	3.2	180	0	29	48	.3

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)
JUN 11...	8.8	360	.090	.020	.090	.080	.320	.330	.010
JUL 28...	8.4	330	.110	.000	.110	.080	.770	.770	.010
AUG 13...	8.8	361	.030	.020	.050	.060	.290	.290	.010
SEP 15...	8.8	330	.020	.000	.020	.030	.400	.430	.010

08154700 BULL CREEK AT LOOP 360 NEAR AUSTIN, TX

LOCATION.--Lat 30°22'19", long 97°47'04", Travis County, Hydrologic Unit 12090205, on right bank at downstream side of bridge at Loop 360, 1.0 mi (1.6 km) upstream from West Fork Bull Creek and Farm Road 2222, and 7.1 mi (11.4 km) northwest of the State Capitol Building in Austin.

DRAINAGE AREA.--22.3 mi² (57.8 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1976 to July 1978 (operated as a flood-hydrograph partial-record station only), July 1978 to current year.

GAGE.--Water-stage recorder, concrete control, and crest-stage gage. Datum of gage is 534.00 ft (162.768 m) National Geodetic Vertical Datum of 1929 (levels from city of Austin bench mark).

REMARKS.--Water-discharge records good. No known regulation or diversion above station. There are two recording rain gages in the basin above the station. This station is part of a hydrologic research project to study the rainfall-runoff relationship for the Austin urban-rural areas.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,420 ft³/s (40.2 m³/s) Apr. 18, 1976, gage height, 6.00 ft (1.829 m); minimum discharge not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft³/s (5.66 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 27	1500	465	13.2	4.76	1.451	May 13	2115	219	6.20	4.01	1.222
Apr. 25	0315	381	10.8	4.53	1.381	May 15	1915	302	8.55	4.29	1.308
May 8	0930	*500	14.2	4.85	1.478	Sept. 19	0445	203	5.75	3.95	1.204
May 12	1115	290	8.21	4.26	1.298						

Minimum discharge, 0.12 ft³/s (0.003 m³/s) July 31 to Aug. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CAL YR 1979 TOTAL [illegible]

WTR YR 1980 TOTAL [illegible]

(†) Weighted-mean rainfall, in inches, [illegible] based on two rain gages.

08154700 BULL CREEK AT LOOP 360 NEAR AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: April 1978 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
OCT										
29...	1035	.29	699	8.0	21.5	5	1.0	7.2	82	.7
JAN										
14...	1005	1.8	638	8.3	10.0	10	3.0	10.4	94	.6
MAR										
27...	0935	114	226	7.9	14.5	40	740	9.9	103	2.9
27...	1300	157	475	8.1	--	--	--	--	--	--
27...	1400	274	436	8.1	--	--	--	--	--	--
27...	1510	461	366	8.3	--	--	--	--	--	--
APR										
25...	0305	154	509	8.2	--	5	370	--	--	17
25...	0335	216	303	8.0	--	30	3800	--	--	22
MAY										
08...	0935	156	318	8.1	--	30	310	--	--	16
08...	1005	580	413	8.0	--	20	1100	--	--	17
08...	1235	360	386	8.0	--	60	610	--	--	11
08...	1535	211	750	8.1	--	30	260	--	--	7.2
09...	1030	48	530	8.1	18.5	20	21	9.1	97	6.3

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
OCT									
29...	680	35	100	--	--	--	--	--	--
JAN									
14...	690	216	26	260	76	69	22	27	.7
MAR									
27...	27000	16000	82000	88	18	27	3.2	3.6	.2
27...	--	--	--	180	53	53	14	22	.7
27...	--	--	--	170	30	50	12	13	.4
27...	--	--	--	170	27	47	12	13	.4
APR									
25...	--	--	--	240	66	66	15	18	.5
25...	--	--	--	140	33	46	6.3	9.6	.3
MAY									
08...	82000	18000	17000	150	33	46	8.1	8.7	.3
08...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	11	15	[illegible]
08...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6.6	6.0	[illegible]
08...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	12	12	[illegible]
09...	[illegible]	[illegible]	8400	260	61	77	17	18	.5

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)
OCT									
29...	--	--	--	--	--	--	--	--	3
JAN									
14...	1.8	280	0	64	60	.2	9.8	[illegible]	[illegible]
MAR									
27...	[illegible]	88	0	[illegible]	4.8	.1	[illegible]	[illegible]	1080
27...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
27...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
27...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
APR									
25...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAY									
08...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
08...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
08...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
08...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
09...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

08154700 BULL CREEK AT LOOP 360 NEAR AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, VOLA- TILE, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT									
29...	1	.00	.00	.00	.02	.42	.44	.010	7.1
JAN									
14...	0	.00	.00	.00	.00	.14	.14	.010	4.4
MAR									
27...	156	.70	.01	.71	.16	3.3	3.5	.500	34
27...	--	.80	.06	.86	.19	4.7	4.9	.470	--
27...	--	.50	.03	.53	.22	8.6	8.8	.550	--
27...	--	.23	.01	.24	.11	9.9	10	.560	--
APR									
25...	128	.16	.00	.16	.00	2.3	2.3	.280	43
25...	628	.60	.01	.61	.48	13	13	1.700	160
MAY									
08...	146	.63	.01	.64	.11	8.6	8.7	.360	100
08...	212	.31	.01	.32	.10	8.3	8.4	.380	100
08...	144	.55	.01	.56	.11	3.3	3.4	.370	57
08...	26	.56	.01	.57	.07	1.3	1.4	.160	.0
09...	0	.67	.01	.68	.03	.57	.60	.040	14

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
JAN							
14...	1005	0	50	<1	0	0	<10
MAR							
27...	0935	1	20	<1	10	3	160
27...	1300	1	40	<1	0	4	<10
27...	1600	1	40	<1	0	3	40
27...	1510	1	40	<1	0	2	50
APR							
25...	0305	1	50	<1	0	2	20
25...	0335	3	30	<1	0	3	270

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN						
14...	0	<1	.1	0	0	<3
MAR						
27...	4	9	.1	0	0	7
27...	1	<1	.2	0	0	<3
27...	0	1	.1	0	0	<3
27...	1	2	.3	0	0	<3
APR						
25...	0	2	.1	0	0	3
25...	3	30	.0	0	0	9

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

08154700 BULL CREEK AT LOOP 360 NEAR AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	PCB TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JAN									
14...	1005	.00	.0	.00	.0	.00	.00	.00	.00
MAR									
27...	0935	.00	.0	.00	.0	.00	.00	.00	.28

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JAN									
14...	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAR									
27...	.00	.00	.00	.00	.00	.00	.00	.02	.00

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN									
14...	.00	.00	.00	.00	0	.00	.01	.00	.00
MAR									
27...	.00	.00	.00	.00	0	.00	.22	.02	.00

08154900 LAKE AUSTIN AT AUSTIN, TX

LOCATION.--Lat 30°18'53", long 97°47'10", Travis County, Hydrologic Unit 12090205, at city of Austin Waterplant No. 2 and 1.5 mi (2.4 km) upstream from Tom Miller Dam on the Colorado River at Austin.

DRAINAGE AREA.--38,240 mi² (99,040 km4), of which 12,880 mi² (33,360 km²), revised, probably is noncontributing.

PERIOD OF RECORD.--Chemical analyses: October 1964 to September 1980 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1964 to September 1980 (discontinued).
WATER TEMPERATURES: October 1964 to September 1980 (discontinued).

REMARKS.--No water-discharge records available.

EXTREMES FOR PERIOD OF DAILY RECORDS.--
SPECIFIC CONDUCTANCE (1964-75): Maximum daily, 982 micromhos Aug. 15-17, 1974; minimum daily, 311 micromhos June 19, 1968.
WATER TEMPERATURES (1964-75): Maximum daily, 32.0°C Aug. 24, 1965; minimum daily, 9.0°C Jan. 30, 1966, Jan. 9, 11, 1968, and Jan. 5, 1969.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
OCT 19...	1330	515	24.5	190	30	43	21	27	.8
DEC 17...	1622	514	11.0	210	41	46	22	27	.8
JAN 18...	1330	502	13.5	200	40	44	21	26	.8
FEB 19...	1545	532	13.5	220	46	51	22	26	.8
APR 15...	1330	489	17.0	190	33	41	21	24	.8
MAY 14...	1635	479	20.0	190	28	44	20	22	.7
JUL 22...	1625	490	22.5	190	36	42	21	25	.8
AUG 21...	1546	492	23.5	200	36	44	22	27	.8
SEP 17...	1630	503	25.5	200	40	42	22	25	.8

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
OCT 19...	3.5	200	0	32	48	.2	[illegible]	282
DEC 17...	4.3	200	0	18	51	.2	[illegible]	279
JAN 18...	3.2	190	0	44	43	.2	[illegible]	287
FEB 19...	3.0	210	0	37	46	.2	[illegible]	298
APR 15...	3.3	190	0	28	41	.3	[illegible]	260
MAY 14...	3.1	200	0	31	39	.3	[illegible]	266
JUL 22...	3.2	190	0	31	44	.3	[illegible]	268
AUG 21...	[illegible]	200	0	29	33	.3	[illegible]	283
SEP 17...	3.2	190	0	30	38	.3	[illegible]	275

08154900 LAKE AUSTIN AT AUSTIN, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	517	468	504	491	527	481	---	---	482	487	489
2	497	515	469	508	493	528	---	486	471	---	446	484
3	484	494	514	511	508	526	480	484	---	488	---	---
4	513	486	495	---	452	526	479	489	---	---	489	490
5	---	483	---	510	499	525	489	477	---	479	472	498
6	510	501	522	505	495	524	499	---	---	485	488	489
7	515	515	515	510	506	523	490	487	---	475	---	489
8	511	---	518	503	511	---	493	488	492	---	---	493
9	517	517	498	507	500	517	---	479	495	---	472	---
10	516	518	515	509	506	523	483	---	494	---	478	489
11	507	519	---	507	495	516	---	---	487	---	479	---
12	516	---	---	503	497	---	479	483	490	460	490	---
13	---	511	516	505	513	524	480	477	491	493	---	---
14	---	519	515	507	512	518	475	---	490	458	---	492
15	521	521	514	505	502	---	487	---	491	---	---	494
16	516	520	509	505	520	525	---	472	492	---	---	---
17	516	---	515	507	522	519	482	486	494	489	---	---
18	519	517	---	502	528	512	487	486	493	490	476	---
19	515	523	---	501	529	519	486	497	492	456	466	507
20	512	521	518	503	---	516	484	---	491	487	473	514
21	516	514	520	500	---	511	488	---	488	487	484	517
22	511	512	516	500	514	509	485	502	481	---	484	512
23	517	515	509	501	536	508	---	489	489	---	---	---
24	514	520	---	500	547	507	491	---	487	487	---	---
25	517	---	---	502	---	---	486	490	492	490	---	---
26	516	518	---	502	493	---	485	496	486	485	492	529
27	515	520	---	501	509	503	---	---	---	482	491	---
28	517	522	---	503	546	496	485	---	489	492	488	525
29	517	515	510	503	496	497	---	491	489	---	488	522
30	523	---	510	489	---	---	---	492	484	490	---	---
31	515	---	503	491	---	486	---	---	---	490	487	---
MEAN	513	513	508	503	508	515	485	487	489	482	481	502

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	20.5	13.5	12.0	10.5	14.5	17.0	---	---	21.5	23.0	---
2	23.5	20.0	13.5	11.0	12.0	12.0	---	19.0	21.0	---	23.0	23.5
3	23.0	20.0	13.5	13.0	12.0	12.0	16.5	19.0	---	21.5	---	---
4	23.5	19.5	14.0	---	11.5	13.0	18.0	19.0	---	---	24.0	23.5
5	---	20.0	---	11.5	10.5	13.5	18.0	18.5	---	21.5	24.0	23.5
6	19.5	18.5	14.0	11.5	10.5	13.5	17.0	---	---	21.0	24.0	24.0
7	19.0	---	13.5	11.5	11.5	14.5	16.5	18.0	---	21.5	---	23.0
8	23.0	---	13.5	12.0	13.5	---	17.0	18.0	22.0	---	---	23.0
9	21.5	20.0	13.5	12.0	10.0	14.5	---	19.0	21.0	---	22.0	---
10	21.0	18.5	14.0	14.5	10.0	15.5	16.5	---	20.5	---	22.0	23.0
11	22.0	18.5	---	21.0	10.0	15.5	---	---	20.0	---	22.0	---
12	22.0	---	---	11.5	10.0	---	16.0	19.5	19.0	21.5	23.0	---
13	---	18.5	13.0	11.5	10.0	16.5	17.0	20.0	19.5	22.0	---	---
14	---	18.5	12.0	21.0	11.5	16.0	17.0	---	20.0	21.5	---	23.0
15	23.0	17.0	13.0	13.5	12.0	---	17.0	---	20.0	---	---	23.5
16	23.0	18.0	13.5	14.0	13.0	16.0	---	19.5	20.5	---	---	---
17	21.5	---	11.5	13.5	10.0	16.5	17.0	19.5	20.5	21.5	---	---
18	23.0	18.0	---	13.0	10.5	15.5	16.5	19.5	21.5	21.5	22.0	---
19	---	18.5	---	12.0	10.5	15.5	17.0	19.0	21.0	22.0	23.0	23.5
20	23.0	18.5	12.0	13.5	---	16.0	17.0	---	21.5	22.0	23.5	23.5
21	23.0	18.5	13.0	12.5	---	16.0	17.0	---	22.0	22.0	24.5	24.0
22	24.0	16.5	13.0	13.0	13.0	17.0	18.0	20.0	22.0	---	23.5	23.5
23	21.0	16.5	12.0	12.0	13.0	16.0	---	23.0	21.5	---	---	---
24	21.5	16.5	---	12.5	15.0	17.0	16.5	---	22.0	22.0	---	---
25	21.0	---	---	12.5	15.0	---	16.5	23.0	22.0	21.5	---	---
26	22.0	16.5	---	13.0	16.0	---	16.5	21.5	22.0	21.0	23.0	23.5
27	23.0	20.0	---	12.0	16.0	16.5	---	---	---	22.0	23.0	---
28	22.0	16.0	---	12.0	16.5	16.0	17.0	---	---	23.0	23.0	24.5
29	22.0	15.5	12.0	11.0	16.5	17.0	---	21.5	22.0	---	23.5	24.5
30	22.0	---	13.5	11.0	---	---	---	21.0	23.0	22.0	---	---
31	21.0	---	13.0	10.5	---	17.0	---	---	---	23.0	---	---
MEAN	22.7	18.5	13.0	13.0	12.0	15.5	17.0	20.0	21.0	22.0	23.0	24.0

LAKE AUSTIN AT AUSTIN, TX

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1978 to current year.

301739097471601 LAKE AUSTIN SITE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
05...	1030	1.0	527	8.1	12.5	10.3	97
05...	1032	10	527	8.1	12.5	10.3	97
05...	1034	18	527	8.1	12.5	10.3	97
MAY							
20...	1107	1.0	481	7.9	23.5	9.0	107
20...	1109	10	481	7.9	22.5	8.9	103
20...	1111	20	478	7.7	18.5	6.2	67
20...	1113	30	478	7.7	18.0	5.9	63
20...	1115	40	478	7.7	18.0	6.0	64
20...	1117	50	478	7.7	17.5	5.6	59
20...	1119	54	478	7.6	17.5	5.1	54
JUL							
30...	1115	1.0	489	7.9	25.0	7.7	94
30...	1118	10	489	7.8	21.5	6.9	78
30...	1121	20	489	7.8	21.5	6.7	76
30...	1123	32	489	7.8	21.0	6.3	71

301739097471201 LAKE AUSTIN SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR										
05...	0955	1.0	527	8.1	12.5	1.80	5	2.3	10.3	97
05...	0957	10	527	8.1	12.5	--	--	--	10.3	97
05...	0959	20	527	8.1	12.5	--	--	--	10.3	97
05...	1001	30	527	8.1	12.5	--	--	--	10.3	97
05...	1003	34	527	8.1	12.5	--	1	2.5	10.3	97
MAY										
20...	1045	1.0	481	7.9	23.5	1.92	5	5.5	9.0	107
20...	1047	10	481	7.9	22.5	--	--	--	9.1	106
20...	1049	20	478	7.7	18.5	--	--	--	6.2	67
20...	1051	30	478	7.6	18.0	--	--	--	6.0	64
20...	1053	35	478	7.6	18.0	--	0	5.6	6.0	64
JUL										
30...	1030	1.0	489	8.0	25.5	2.19	0	1.3	8.0	98
30...	1032	10	489	7.8	21.5	--	--	--	6.9	78
30...	1034	20	489	7.8	21.0	--	--	--	6.7	75
30...	1036	30	489	7.7	21.0	--	--	--	6.5	73
30...	1038	40	489	7.7	20.5	--	--	--	6.1	68
30...	1040	54	489	7.6	20.5	--	10	4.7	5.4	60

DATE	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
MAR										
05...	.7	800	12	17	210	62	60	23	27	.8
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	.8	--	--	--	210	60	47	23	20	.8
MAY										
20...	.9	10	6	1	200	32	60	20	21	.6
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	.6	--	--	--	180	30	43	21	23	.7
JUL										
30...	.9	200	47	66	180	30	60	20	24	.8
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	1.0	--	--	--	160	23	61	20	24	.8

LAKE AUSTIN AT AUSTIN, TX--Continued

301739097471201 LAKE AUSTIN SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)
MAR										
05...	3.4	210	0	35	44	.2	7.9	292	0	0
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	3.4	210	0	36	44	.2	7.9	293	0	0
MAY										
20...	2.9	210	0	29	32	.2	8.4	266	18	18
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	3.2	190	0	28	37	.2	8.9	258	28	13
JUL										
30...	3.4	190	0	29	43	.4	8.2	262	1	2
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	3.0	190	0	29	43	.2	9.1	263	6	3

DATE	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR										
05...	.05	.000	.05	.010	.36	.37	.42	.010	<10	<1
05...	--	--	--	--	--	--	--	--	--	--
05...	.05	.000	.05	.010	.41	.42	.47	.010	0	10
05...	--	--	--	--	--	--	--	--	--	--
05...	.06	.000	.06	.010	.34	.35	.41	.010	<10	<1
MAY										
20...	.15	.010	.16	.010	.46	.47	.63	.010	<10	<3
20...	--	--	--	--	--	--	--	--	--	--
20...	.11	.010	.12	.040	.34	.38	.50	.010	20	0
20...	--	--	--	--	--	--	--	--	--	--
20...	.13	.010	.14	.060	1.0	1.1	1.2	.010	<10	<3
JUL										
30...	.04	.010	.05	.000	1.3	1.3	1.3	.010	<10	<1
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	.08	.010	.09	.010	.99	1.0	1.1	.010	10	10
30...	--	--	--	--	--	--	--	--	--	--
30...	.09	.010	.10	.040	1.1	1.1	1.2	.010	20	7

301739097470901 LAKE AUSTIN SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
05...	1045	1.0	527	8.1	12.5	10.3	97
05...	1047	10	527	8.1	12.5	10.3	97
05...	1049	18	527	8.1	12.5	10.3	97
MAY							
20...	1034	1.0	481	7.8	23.5	9.1	108
20...	1036	10	481	7.8	22.5	9.1	106
20...	1038	16	478	7.6	21.5	7.6	86
JUL							
30...	1127	1.0	[illegible]	8.0	29.5	8.1	99
30...	1130	10	[illegible]	7.8	27.5	6.3	76
30...	1133	18	[illegible]	7.7	25.5	6.2	70

LAKE AUSTIN AT AUSTIN, TX--Continued

302043097472401 LAKE AUSTIN SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	NITROGEN, NITRATE TOTAL (MG/L AS N)
MAR									
05...	1100	1.0	505	8.1	13.0	2.70	10.0	96	.04
05...	1102	10	505	8.1	12.5	--	10.0	94	--
05...	1104	20	505	8.1	12.5	--	10.0	94	--
05...	1106	28	505	8.1	12.5	--	9.8	92	.03
MAY									
20...	1138	1.0	481	7.9	24.0	1.95	8.5	101	.15
20...	1140	10	481	7.8	22.0	--	8.2	94	--
20...	1142	20	481	7.7	19.0	--	6.4	70	--
20...	1144	28	481	7.5	18.0	--	4.9	52	.05
JUL									
30...	1146	1.0	489	8.0	27.5	1.98	7.7	98	.01
30...	1148	10	489	8.0	23.5	--	7.7	91	--
30...	1150	20	489	7.9	21.0	--	6.8	76	--
30...	1152	29	489	7.8	21.0	--	6.4	73	.07

DATE	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR									
05...	.000	.04	.000	.62	.62	.66	.000	0	10
05...	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--
05...	.000	.03	.010	.40	.41	.44	.000	0	10
MAY									
20...	.010	.16	.010	.47	.48	.64	.010	10	0
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	.010	.06	.070	.33	.40	.46	.010	30	10
JUL									
30...	.010	.02	.000	1.1	1.1	1.1	.010	20	10
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	.010	.08	.010	.72	.73	.81	.010	10	10

302044097472301 LAKE AUSTIN SITE BL

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
05...	1115	1.0	505	8.1	13.0	10.0	96
05...	1117	12	505	8.1	12.5	10.0	94
MAY							
20...	1152	1.0	481	7.9	24.0	8.6	102
20...	1154	11	481	7.8	22.0	8.2	94
JUL							
30...	1201	1.0	489	8.0	28.0	7.5	96
30...	1205	7.0	489	7.9	27.5	7.4	94

LAKE AUSTIN AT AUSTIN, TX--Continued

301926097502201 LAKE AUSTIN SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR										
05...	1130	1.0	486	8.1	13.0	3.3	2	1.4	10.4	100
05...	1132	10	486	8.1	13.0	--	--	--	10.4	100
05...	1134	20	486	8.1	12.5	--	--	--	10.4	98
05...	1136	27	486	8.1	12.0	--	2	1.0	9.9	93
MAY										
20...	1211	1.0	474	7.9	24.5	2.19	0	5.4	8.4	102
20...	1213	10	482	7.8	21.0	--	--	--	7.9	89
20...	1215	20	482	7.6	18.0	--	--	--	5.7	61
20...	1217	28	482	7.6	18.0	--	5	1.6	--	61
JUL										
30...	1235	1.0	489	8.0	23.5	3.5	0	.60	7.7	91
30...	1239	10	489	7.9	20.5	--	--	--	6.9	77
30...	1243	20	489	7.9	20.5	--	--	--	6.8	76
30...	1247	28	489	7.9	20.5	--	0	1.1	6.8	76

DATE	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
MAR										
05...	.4	150	4	9	200	40	42	22	27	.8
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	.4	--	--	--	190	33	41	21	26	.8
MAY										
20...	.6	9	4	1	200	26	48	19	20	.6
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	.5	--	--	--	190	--	45	20	21	.7
JUL										
30...	.5	100	27	K6	180	29	41	20	24	.8
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	.7	--	--	--	180	29	41	20	24	.8

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)
MAR										
05...	3.3	190	0	30	43	.2	8.3	269	0	0
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	3.3	190	0	31	43	.2	8.2	264	0	0
MAY										
20...	2.8	210	0	27	31	.2	8.4	260	17	14
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	3.0	>200	0	27	34	.2	9.7	258	8	0
JUL										
30...	3.1	190	0	29	44	.2	8.6	264	0	0
30...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
30...	3.3	190	0	29	46	.2	8.7	266	4	2

DATE	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR										
05...	.02	.000	.02	.000	1.9	1.9	1.9	.000	<10	2
05...	--	--	--	--	--	--	--	--	--	--
05...	.06	.000	.06	.010	1.3	1.3	1.3	.000	0	10
05...	.02	.000	.02	.010	.29	.30	.32	.000	<10	3
MAY										
20...	.13	.010	.14	.010	.44	.45	.59	.010	<10	13
20...	.10	.010	.11	.010	.32	.33	.43	.030	20	0
20...	--	--	--	--	--	--	--	--	--	--
20...	.02	.010	.04	.000	1.2	1.4	1.5	.010	<10	0
JUL										
30...	.01	.010	.07	.010	.16	.20	[illegible]	.010	<10	2
30...	.02	.010	.08	.010	.80	1.0	1.1	.030	0	20
30...	--	--	--	--	--	--	--	--	--	--
30...	.07	.010	.08	.010	.04	.02	.12	.010	<10	10

LAKE AUSTIN AT AUSTIN, TX--Continued

302021097540001 LAKE AUSTIN SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMP-LING DEPTH (FT)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)
MAR									
05...	1215	1.0	486	8.1	13.0	3.0	10.1	96	.02
05...	1217	10	486	8.1	12.5	--	10.1	95	--
05...	1219	15	486	8.1	12.5	--	10.1	97	.03
MAY									
20...	1247	1.0	479	7.8	24.0	1.80	8.1	96	.12
20...	1249	10	479	7.8	22.0	--	8.0	92	--
20...	1251	14	479	7.6	21.0	--	6.3	71	.08
JUL									
30...	1335	1.0	489	7.9	19.0	3.5	6.0	65	.10
30...	1340	10	489	7.8	18.5	--	5.7	62	--
30...	1345	16	489	7.8	18.5	--	5.5	60	.12

DATE	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
MAR									
05...	.000	.02	.000	.37	.37	.39	.000	0	20
05...	--	--	--	--	--	--	--	--	--
05...	.000	.03	.010	.38	.39	.42	.010	0	20
MAY									
20...	.010	.13	.000	.40	.40	.53	.010	20	10
20...	--	--	--	--	--	--	--	--	--
20...	.010	.09	.090	.35	.44	.53	.030	20	70
JUL									
30...	.010	.11	.010	.52	.53	.64	.010	10	10
30...	--	--	--	--	--	--	--	--	--
30...	.010	.13	.010	.53	.54	.67	.010	10	10

302314097544901 LAKE AUSTIN SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMP-LING DEPTH (FT)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
MAR										
05...	1240	1.0	475	8.1	13.5	1.50	5	3.1	10.8	104
05...	1242	7.0	475	8.1	13.5	--	5	3.0	10.8	104
MAY										
20...	1338	1.0	487	8.0	16.5	2.38	5	2.8	7.4	76
20...	1340	8.0	487	8.2	15.0	--	0	4.0	8.3	83
JUL										
30...	1400	1.0	489	7.8	18.5	2.13	0	.70	5.2	56
30...	1405	9.0	489	7.8	18.5	--	0	1.4	5.0	54

DATE	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
MAR										
05...	.6	820	3	2	180	31	60	21	26	.8
05...	.6	--	--	--	180	31	60	21	26	.8
MAY										
20...	.3	6	3	1	180	33	61	21	27	.8
20...	.6	--	--	--	180	33	61	21	26	.8
JUL										
30...	.6	80	<3	<3	180	29	60	22	26	.8
30...	.5	--	--	--	180	29	61	22	26	.8

302314097344901 LAKE AUSTIN SITE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)
MAR										
05...	3.2	190	0	30	43	.2	7.2	171	3	3
05...	3.2	190	0	31	42	.2	7.3	264	0	0
MAY										
20...	3.3	190	0	28	41	.2	8.7	261	14	8
20...	3.3	190	0	30	40	.2	8.8	262	10	0
JUL										
30...	3.3	190	0	29	44	.4	8.5	263	4	0
30...	3.5	190	0	32	44	.4	8.5	267	2	0

DATE	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR										
05...	.05	.000	.05	.000	.35	.35	.40	.000	<10	2
05...	.06	.000	.06	.030	.55	.58	.64	.020	<10	2
MAY										
20...	.12	.010	.13	.010	1.1	1.1	1.2	.010	<10	3
20...	.05	.010	.06	.000	.34	.34	.40	.010	30	3
JUL										
30...	.11	.000	.11	.000	1.3	1.3	1.4	.010	<10	2
30...	.10	.010	.11	.000	1.1	1.1	1.2	.010	<10	2

301739097471201 LAKE AUSTIN SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L)	URANIUM DISSOLVED, EXTRACTION (UG/L)
JUL												
30...	1030	1.0	<3.4	<.3	<3.0	<.4	3.3	<.4	3.2	<.4	.11	1.2
30...	1040	34	<3.1	.3	<4.6	.8	4.3	.3	4.3	.3	.15	1.3

302314097344901 LAKE AUSTIN SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L)	URANIUM DISSOLVED, EXTRACTION (UG/L)
JUL												
30...	1400	1.0	<3.4	<.3	<3.0	<.4	8.8	<.5	8.3	<.4	.13	1.0
30...	1425	9.0	<3.6	<.3	<3.3	<.4	3.6	.3	3.3	.3	.11	1.3

LAKE AUSTIN AT AUSTIN, TX--Continued

301739097471201 LAKE AUSTIN SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	PCB, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)
MAR									
05...	0955	1.0	.0	.00	.00	.0	.00	.00	.00
05...	1003	34	.0	.00	.00	.0	.00	.00	.00
JUL									
30...	1030	1.0	.0	.00	.00	.0	.00	.00	.00
30...	1040	54	.0	.00	.00	.0	.00	.00	.00

DATE	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)
MAR									
05...	.00	.00	.00	.00	.00	.00	.00	.00	.00
05...	.00	.00	.00	.00	.00	.00	.00	.00	.00
JUL									
30...	.00	.00	.00	.00	.00	.00	.00	.00	.00
30...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
MAR								
05...	.00	.00	.00	0	.00	.35	.00	.00
05...	.00	.00	.00	0	.00	.61	.00	.00
JUL								
30...	.00	.00	.00	0	.00	.13	.00	.00
30...	.00	.00	.00	0	.00	.02	.00	.00

08155200 BARTON CREEK AT STATE HIGHWAY 71 NEAR OAK HILL, TX

LOCATION.--Lat 30°17'46", long 97°55'31", Travis County, Hydrologic Unit 12090205, at downstream side of bridge on State Highway 71, 0.1 mi (0.2 km) downstream from Little Barton Creek, and 5.8 mi (9.3 km) northwest of Oak Hill.

DRAINAGE AREA.--89.7 mi^2 (232.3 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1975 to February 1978 (periodic gage heights and discharge measurements only), February 1978 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 737.04 ft (224.650 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair above 15.0 ft^3/s (0.42 m^3/s) and poor below. No known regulation or diversions. There are two recording rain gages in the watershed.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,750 ft^3/s (135 m^3/s) Apr. 18, 1976, gage height, 11.56 ft (3.523 m); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 603 ft^3/s (17.1 m^3/s) May 12 at 1715 hours, gage height, 5.08 ft (1.548 m), no peak above base of 1,000 ft^3/s (28.3 m^3/s); no flow Aug. 21 to Sept. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.89	.27	.30	1.0	.89	2.8	18	35	42	2.0	.21	.00
2	.88	.27	.30	1.1	.93	2.6	18	24	36	1.8	.20	.00
3	.78	.27	.27	1.1	.94	2.1	17	22	30	1.6	.19	.00
4	.70	.25	.27	1.1	.99	1.7	16	20	27	1.4	.18	.00
5	.63	.25	.30	1.1	.99	1.6	15	20	26	1.2	.18	.00
6	.63	.25	.27	1.0	.97	1.5	15	19	24	1.0	.17	.00
7	.59	.25	.27	.99	.98	1.5	15	24	21	.98	.18	.01
8	.59	.27	.23	.94	1.3	1.5	13	79	19	.89	.16	.08
9	.57	.27	.23	.89	1.9	1.5	13	62	19	.75	.14	7.0
10	.58	.25	.23	.97	2.5	1.5	13	41	19	.64	.15	4.2
11	.55	.27	.17	.99	1.7	1.5	12	38	16	.55	.18	2.3
12	.48	.27	.29	.95	1.5	1.5	33	186	15	.51	.19	1.4
13	.48	.25	.31	.94	1.2	1.4	71	205	15	.47	.18	.84
14	.45	.27	.31	.94	1.3	1.4	39	333	13	.39	.15	.68
15	.45	.27	.26	.94	1.2	1.3	30	267	11	.38	.12	.57
16	.42	.27	.24	.94	1.8	1.4	27	257	9.0	.38	.10	.50
17	.42	.27	.21	.94	1.8	1.5	24	220	8.1	.37	.08	.42
18	.39	.27	.22	.94	1.8	1.5	24	183	7.8	.36	.07	.39
19	.39	.27	.23	.94	1.7	1.5	22	177	5.8	.34	.04	.44
20	.38	.27	.23	.94	1.5	1.4	22	146	5.0	.34	.01	1.1
21	.39	.34	.23	1.1	1.5	1.3	20	129	3.9	.34	.00	3.3
22	.40	.32	.27	1.4	1.4	1.3	20	115	3.2	.36	.00	2.3
23	.34	.30	.29	1.5	1.4	1.3	19	104	2.4	.36	.00	1.5
24	.34	.32	.29	1.3	1.4	1.3	18	91	2.2	.31	.00	1.2
25	.32	.34	.25	1.2	1.4	1.4	51	86	2.1	.26	.00	.94
26	.29	.32	.23	1.1	1.5	1.5	35	81	2.1	.27	.00	3.0
27	.26	.32	.21	1.0	1.4	42	26	73	2.1	.25	.00	6.2
28	.26	.32	.48	.96	1.4	52	24	67	2.1	.25	.00	7.1
29	.25	.27	1.4	.94	1.4	27	22	60	2.1	.25	.00	11
30	.31	.30	1.0	.94	---	20	22	54	2.1	.23	.00	54
31	.31	---	.89	.92	---	19	---	48	---	.21	.00	---
TOTAL	14.72	8.43	10.68	32.01	40.69	200.8	714	3266	393.0	19.44	2.88	110.47
MEAN	.47	.28	.34	1.03	1.40	6.48	23.8	105	13.1	.63	.093	3.68
MAX	.89	.34	1.4	1.5	2.5	52	71	333	42	2.0	.21	54
MIN	.25	.25	.17	.89	.89	1.3	12	19	2.1	.21	.00	.00
CFSM	.005	.003	.004	.01	.02	.07	.27	1.17	.15	.007	.001	.04
IN..	.01	.00	.00	.01	.02	.08	.30	1.35	.16	.01	.00	.05
AC-FT	29	17	21	63	81	398	1420	6480	780	39	5.7	219
(††)	.55	.81	2.47	1.24	2.44	3.34	3.98	5.81	.07	.38	.74	9.12

CAL YR 1979 TOTAL 20707.45 MEAN 56.7 MAX 995 MIN .17 CFSM .63 IN 8.59 AC-FT 41070 †† 35.52
WTR YR 1980 TOTAL 4813.12 MEAN 13.2 MAX 333 MIN .00 CFSM .15 IN 2.00 AC-FT 9550 †† 30.95

†† Weighted-mean rainfall on watershed, in inches, based on two rain gages.

08155200 BARTON CREEK AT STATE HIGHWAY 71 NEAR OAK HILL, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: April 1978 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
OCT 31...	1215	.31	425	8.2	20.0	5	.40	8.4	94	.8
JAN 16...	1315	.94	410	7.9	16.0	5	2.0	8.1	83	.5
MAY 29...	1505	61	456	7.7	26.5	--	--	--	--	--

DATE	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
OCT 31...	320	110	92	--	--	--	--	--	--
JAN 16...	120	K6	K13	190	21	51	16	7.4	.2
MAY 29...	1200	K8	20	220	15	60	17	6.3	.2

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)
OCT 31...	--	--	--	--	--	--	--	--	0
JAN 16...	.8	210	0	21	14	.1	7.2	221	0
MAY 29...	1.0	250	0	18	11	.2	8.4	245	--

DATE	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 31...	0	.02	.00	.02	.00	.31	.31	.000	15
JAN 16...	0	.02	.00	.02	.00	.02	.02	.010	5.2
MAY 29...	--	.07	.00	.07	.00	.26	.26	.000	8.8

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
JAN 16...	1315	0	20	<1	0	0	<10
MAY 29...	1505	1	30	<1	0	4	<10

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN 16...	0	2	.0	0	0	<3
MAY 29...	3	<1	.0	0	1	<3

DATE	TIME	GROSS ALPHA, DIS- SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L)
JAN 16...	1315	<3.2	<.3	<4.7	<.4	2.0	.4	1.8	.4	.03	.55

DATE	TIME	PCB TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
JAN 16...	1315	.00	.0	.00	.0	.00	.00	.00	.00

DATE	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)
JAN 16...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 16...	.00	.00	.00	.00	0	.00	.00	.00	.00

08155300 BARTON CREEK AT LOOP 360, AUSTIN, TX

LOCATION.--Lat 30°14'40", long 97°48'07", Travis County, Hydrologic Unit 12090205, on Loop 360, 0.9 mi (1.4 km) west of the intersection of Ben White and Lamar Boulevards, and 4.3 mi (6.9 km) southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--116 mi² (300 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1975 to January 1977 (periodic gage heights and discharge measurements only). February 1977 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 510.32 ft (155.546 m) National Geodetic Vertical Datum of 1929 (State Department of Highways and Public Transportation bench mark).

REMARKS.--Records fair. No known regulation or diversions. There are three recording rain gages located in the watershed.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,270 ft³/s (92.6 m³/s) Apr. 15, 1977, gage height, 7.67 ft (2.338 m); no flow for many days each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of May 28, 1929, was probably the highest since that date, discharge 39,400 ft³/s (1,120 m³/s), based on a slope-area measurement of peak flow at a site about 2 mi (3 km) upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 586 ft³/s (16.6 m³/s) May 12 at 2300 hours, gage height, 5.46 ft (1.664 m), no peak above base of 1,000 ft³/s (28.3 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.02	.64	34	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.52	32	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.32	29	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.32	23	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.28	18	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.26	12	.00	.00	.03
7	.00	.00	.00	.00	.00	.00	.00	11	11	.00	.00	.46
8	.00	.00	.00	.00	.00	.00	.00	66	9.9	.00	.00	.00
9	.00	.00	.00	.00	.14	.00	.00	93	5.9	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	57	5.2	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	45	3.2	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	171	1.5	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	37	288	.52	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	41	428	.07	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	21	313	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	10	305	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	3.6	260	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	1.1	204	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.37	186	.00	.00	.00	.99
20	.00	.00	.00	.00	.00	.00	.06	164	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	141	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	127	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	111	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	100	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	10	89	.00	.00	.00	.26
26	.00	.00	.00	.00	.00	.00	40	79	.00	.00	.00	.12
27	.00	.00	.00	.00	.00	17	9.4	72	.00	.00	.00	.12
28	.00	.00	.06	.00	.00	65	2.9	65	.00	.02	.00	.15
29	.00	.00	.00	.00	.00	21	1.4	55	.00	.00	.00	.00
30	.00	.00	.00	.00	---	2.4	.92	48	.00	.00	.00	.00
31	.00	---	.00	.00	---	.08	---	40	---	.00	.00	---
TOTAL	.00	.00	.06	.00	.14	105.48	178.77	3520.34	185.29	.02	.00	2:13
MEAN	.000	.000	.002	.000	.005	3.40	5.96	114	6.18	.001	.000	.071
MAX	.00	.00	.06	.00	.14	65	41	428	34	.02	.00	.99
MIN	.00	.00	.00	.00	.00	.00	.00	.26	.00	.00	.00	.00
CFSM	.000	.000	.000	.000	.000	.03	.05	.98	.05	.000	.000	.001
IN.	.00	.00	.00	.00	.00	.03	.06	1.13	.06	.00	.00	.00
AC-FT	.00	.00	.1	.00	.3	209	355	6980	368	.04	.00	4.2
(††)	.62	.78	2.64	1.25	2.51	3.18	3.78	5.85	.10	.39	.72	8.92

CAL YR 1979 TOTAL 21991.16 MEAN 60.2 MAX 1140 MIN .00 CFSM .52 IN 7.05 AC-FT 43620 †† 37.06
WTR YR 1980 TOTAL 3992.23 MEAN 10.9 MAX 428 MIN .00 CFSM .09 IN 1.28 AC-FT 7920 †† 30.74

†† Weighted-mean rainfall on watershed, in inches, based on three rain gages.

08155300 BARTON CREEK AT LOOP 360, AUSTIN, TX--Continued

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1979 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
AP[illegible]										
1[illegible]...	1050	21	373	7.4	13.0	5	9.9	12.4	117	1.0
25...	1350	6.8	--	7.6	24.0	--	--	8.2	--	--
MAY										
12...	1630	195	361	8.2	--	20	130	--	--	1.6

DATE	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
APR									
15...	1800	160	420	180	18	50	13	5.3	.2
25...	--	--	--	--	--	--	--	--	--
MAY									
12...	--	--	--	190	28	54	14	6.6	.2

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)
APR									
15...	1.1	210	0	21	10	.2	7.0	204	5
25...	1.3	--	--	--	--	--	--	--	--
MAY									
12...	1.8	200	0	21	15	.2	8.8	220	184

DATE	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
APR									
15...	2	.12	.000	.12	.000	4.4	4.4	.020	3.1
25...	--	--	--	--	--	--	--	--	--
MAY									
12...	6	.12	.010	.13	.010	.61	.62	.150	6.5

DATE	TIME	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
APR							
15...	1050	0	20	2	0	2	<10
MAY							
12...	1630	1	20	<1	0	0	20

DATE	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
APR						
15...	0	<1	.7	0	0	<3
MAY						
12...	0	4	.0	0	0	10

08155300 BARTON CREEK AT LOOP 360, AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L)	URANIUM DISSOLVED, EXTRACTION (UG/L)
APR 25...	1350	<2.2	.7	<3.3	1.1	<1.4	1.2	<1.5	1.1	.09	.70

DATE	TIME	PCB TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
APR 15...	1050	.00	.0	.00	.0	.00	.00	.00	.00

DATE	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)
APR 15...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
APR 15...	.00	.00	.00	.00	0	.00	.00	.00	.00

08155500 BARTON SPRINGS AT AUSTIN, TX

LOCATION.--Lat 30°15'48", long 97°46'16", Travis County, Hydrologic Unit 12090205, at ground-water well (YD 58-42-903), on right bank 0.4 mi (0.6 km) upstream from Barton Springs Road bridge over Barton Creek, 0.7 mi (1.1 km) upstream from mouth, and 1.8 mi (2.9 km) southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--Not applicable. Only flow from springs is published for this station.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1894 to April 1917, and October 1918 to February 1978 (discharge measurements only), May 1917 to September 1918 (published as "Barton Creek at Austin, Texas"), and March 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage, at ground-water well (YD 58-42-903), is 462.34 ft (140.92 m) National Geodetic Vertical Datum of 1929. May 1917 to September 1918, nonrecording gage at site 1,000 ft (305 m) downstream at different datum.

REMARKS.--Water-discharge records fair. Entire flow published is springflow from the Edwards and associated limestones in the Balcones Fault Zone. This station is part of an urban hydrologic project to study the ground-water resources in the Austin urban area.

EXTREMES FOR PERIOD OF RECORD (DISCHARGE MEASUREMENTS ONLY).--Maximum measured discharge, 166 ft^3/s (4.70 m^3/s) May 10, 1941; minimum measured, 9.6 ft^3/s (0.27 m^3/s) Mar. 29, 1956.

EXTREMES FOR PERIOD OF RECORD (1917-18 AND SINCE MARCH 1978).--Maximum daily discharge, 108 ft^3/s (3.06 m^3/s) June 9-11, 16, 20, 21, 1979; minimum daily, 12 ft^3/s (0.34 m^3/s) Feb. 25, 1918.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 78 ft^3/s (2.21 m^3/s) May 30; minimum daily, 34 ft^3/s (0.96 m^3/s) Mar. 14-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	77	60	50	43	38	36	43	42	77	64	51	37
2	77	59	49	42	38	36	43	42	77	64	46	37
3	76	59	49	42	38	36	42	42	77	64	45	37
4	75	59	49	41	38	36	42	42	77	62	45	37
5	74	59	48	40	37	35	42	42	77	62	44	36
6	73	58	48	40	36	35	42	42	74	62	44	37
7	72	58	47	39	36	35	41	42	73	61	44	37
8	72	58	47	39	37	35	41	44	73	61	43	38
9	71	57	46	38	38	35	41	48	73	60	43	38
10	71	57	46	38	38	35	41	51	73	59	42	38
11	71	56	46	38	37	35	40	51	73	58	42	38
12	71	56	46	38	37	35	40	54	72	59	42	36
13	71	55	46	38	37	35	40	58	71	58	42	37
14	71	54	46	38	36	34	42	61	71	58	42	37
15	71	54	46	37	36	34	43	65	70	57	42	36
16	70	54	45	37	37	34	43	68	69	57	42	35
17	70	54	45	37	37	34	43	73	70	56	41	35
18	69	53	45	37	37	34	42	74	70	55	41	35
19	68	53	44	38	37	34	42	75	70	55	41	37
20	66	53	44	38	37	34	41	75	70	55	40	38
21	66	53	44	37	37	34	41	77	71	54	40	38
22	65	52	44	37	37	34	41	77	70	54	40	38
23	65	52	44	37	36	34	41	77	69	54	40	38
24	64	52	44	37	36	34	40	77	68	53	40	37
25	64	52	44	37	35	34	41	77	68	52	40	37
26	63	51	43	38	35	34	43	77	67	51	38	37
27	62	51	43	39	35	34	44	77	66	51	38	37
28	62	51	43	39	35	36	44	77	67	51	37	37
29	61	50	44	38	35	39	44	77	66	51	38	37
30	61	50	44	38	---	43	43	78	65	51	38	37
31	61	---	43	38	---	43	---	77	---	51	38	---
TOTAL	2130	1640	1412	1193	1063	1096	1256	1939	2134	1760	1289	1109
MEAN	68.7	54.7	45.5	38.5	36.7	35.4	41.9	62.5	71.1	56.8	41.6	37.0
MAX	77	60	50	43	38	43	44	78	77	64	51	38
MIN	61	50	43	37	35	34	40	42	65	51	37	35
AC-FT	4220	3250	2800	2370	2110	2170	2490	3850	4230	3490	2560	2200

CAL YR 1979 TOTAL 29649 MEAN 81.2 MAX 108 MIN 43 AC-FT 58810
WTR YR 1980 TOTAL 18021 MEAN 49.2 MAX 78 MIN 34 AC-FT 35740

08155500 BARTON SPRINGS AT AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: December 1978 to September 1979. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
NOV 05...	0925	65	640	7.1	21.0	0	.30	6.4	72	.1
JAN 16...	0830	38	681	7.1	21.0	5	1.5	5.6	63	.2
JUN 04...	0920	77	549	6.9	21.5	0	1.2	5.2	58	.4
SEP 08...	0830	38	627	7.0	22.0	--	--	--	--	--
26...	0905	37	631	6.7	21.5	0	12	--	--	.8

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
NOV 05...	140	K4	<1	--	--	--	--	--	--
JAN 16...	34	<1	K2	290	30	79	23	21	.5
JUN 04...	520	63	35	270	19	78	17	11	.3
SEP 08...	1200	480	110	280	21	79	21	17	.4
26...	720	33	53	290	35	81	21	19	.5

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)
NOV 05...	--	--	--	--	--	--	--	--	2
JAN 16...	1.5	320	0	31	34	.2	11	358	0
JUN 04...	1.3	300	0	23	17	.2	10	305	94
SEP 08...	1.5	320	0	25	29	--	11	341	--
26...	1.6	310	0	30	31	.3	11	348	7

DATE	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
NOV 05...	2	1.3	.000	1.3	.000	.18	.18	.000	25
JAN 16...	0	1.6	.000	1.6	.000	.26	.26	.050	3.8
JUN 04...	113	.89	.040	.93	.010	--	--	.010	2.0
SEP 08...	--	1.8	.010	1.8	.000	.88	.88	.030	--
26...	8	1.7	.000	1.7	.000	.17	.17	.040	3.4

08155500 BARTON SPRINGS AT AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHROMIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
JAN 16...	0830	0	60	<1	0	0	<10
JUN 04...	0920	1	40	<1	0	0	<10
SEP 26...	0905	1	60	<1	10	<10	<10

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGANESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELENIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN 16...	0	<1	.1	0	0	<3
JUN 04...	0	3	.0	0	0	<3
SEP 26...	17	<1	.0	0	0	<3

DATE	TIME	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	URANIUM NATURAL DIS-SOLVED (UG/L AS U)	URANIUM DIS-SOLVED, EXTRACTION (UG/L)
JAN 16...	0830	<6.0	<.3	<8.8	<.4	<3.3	<.4	<3.0	<.4	.21	--	1.0
SEP 26...	0905	<3.9	.3	<5.8	.5	<3.0	.4	<2.8	.4	.20	.9	--

DATE	TIME	PCB, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
JAN 16...	0830	.0	.00	.00	.0	.00	.00	.00	.00
JUN 04...	0920	.0	.00	.00	.0	.00	.00	.00	.00

DATE	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)
JAN 16...	.00	.00	.00	.00	.00	.00	.00	.00	.00
JUN 04...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 16...	.00	.00	.00	.00	0	.00	.00	.00	.00
JUN 04...	.00	.00	.00	.00	0	.00	.00	.00	.00

08155505 BARTON CREEK BELOW BARTON SPRINGS AT AUSTIN, TX
(Reconnaissance partial-record station)

LOCATION.--Lat 30°15'50", long 97°46'03", Travis County, Hydrologic Unit 12090205, 800 ft (240 m) upstream from bridge on Barton Springs Road and 1.8 mi (2.9 km) southwest of State Capitol at Austin.

DRAINAGE AREA.--125.3 mi^2 (324.5 km^2).

PERIOD OF RECORD.--Occasional discharge measurements: January 1975 to current year. Chemical, biochemical, and pesticide analyses: January 1975 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
NOV 05...	1115	65	642	7.2	21.0	0	30	7.0	79	.4
JAN 16...	1045	36	680	7.2	22.0	0	.50	7.4	85	.4
MAY 29...	0745	133	443	7.6	25.5	--	--	--	--	--

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
NOV 05...	1000	300	84	--	--	--	--	--	--
JAN 16...	100	K10	80	290	30	79	23	22	.6
MAY 29...	2700	400	100	220	12	59	17	7.4	.2

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)
NOV 05...	--	--	--	--	--	--	--	--	91
JAN 16...	1.5	320	0	31	34	.2	11	359	0
MAY 29...	1.2	250	0	19	11	.2	8.7	247	--

DATE	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
NOV 05...	34	1.5	.01	1.5	.02	.64	.66	.040	26
JAN 16...	0	1.6	.02	1.6	.01	6.8	6.8	.050	1.7
MAY 29...	--	.15	.00	.15	.00	.48	.48	.010	6.3

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
JAN 16...	1045	0	60	<1	0	0	<10
MAY 29...	0745	1	30	<1	0	2	<10

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN 16...	1	<1	.1	0	0	<3
MAY 29...	0	<1	.0	0	0	<3

08155505 BARTON CREEK BELOW BARTON SPRINGS, AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L)
JAN 16...	1045	<4.9	<.3	<7.2	<.4	<3.3	<.4	<3.0	<.4	.18	1.2

DATE	TIME	PCB TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JAN 16...	1045	.00	.0	.00	.0	.00	.00	.00	.00

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JAN 16...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 16...	.00	.00	.00	.00	0	.00	.00	.00	.00

08156700 SHOAL CREEK AT NORTHWEST PARK, AUSTIN, TX

LOCATION.--Lat 30°20'50", long 97°44'41", Travis County, Hydrologic Unit 12090205, at Northwest Park in Austin, 400 ft (122 m) upstream from Shoal Creek Boulevard bridge, 0.5 mi (0.8 km) west of intersection of Burnet Road and Justin Lane, and 5.0 mi (8.0 km) north of State Capitol Building in Austin.

DRAINAGE AREA.--7.03 mi² (18.21 km²).

PERIOD OF RECORD.--March 1975 to current year.

GAGE.--Water-stage recorder. Datum of gage is 661.34 ft (201.576 m) National Geodetic Vertical Datum of 1929 (city of Austin bench mark).

REMARKS.--Records fair. The city of Austin diverts water into the channel above gage during the summer months from a swimming pool at Northwest Park. There is some diversion into and out of the drainage area by storm sewers. This station is part of a hydrologic project to study the rainfall-runoff relationship for the Austin urban area. There are two digital recording rain gages in the watershed. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--5 years, 2.00 ft³/s (0.0566 m³/s), 3.86 in/yr (98 mm/yr), 1,450 acre-ft/yr (1.79 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,110 ft³/s (59.8 m³/s) July 19, 1979, gage height, 8.31 ft (2.533 m); no flow for several days each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1885, occurred Apr. 22, 1915, stage and discharge unknown.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 27	a0800	710	20.1	5.70	1.737	May 15	1855	772	21.9	5.84	1.780
Apr. 25	0250	668	18.9	5.60	1.707	Sept. 19	0400	595	16.9	5.42	1.652
May 12	1045	*1,060	30.0	6.45	1.966						

a Estimated.

Minimum discharge, no flow Oct. 26, Sept. 2-4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.07	.04	.02	.16	.14	.15	.86	7.4	.19	.03	.01	.02
2	.09	.02	.02	.13	.34	.06	1.6	.28	.18	.03	.02	.00
3	.11	.02	.02	.13	.14	.07	.31	.21	.16	.03	.02	.00
4	.07	.02	.02	.13	.24	.08	.29	.18	.17	.03	.01	.00
5	.05	.02	.02	.28	.19	.05	.29	.17	.17	.03	.02	.02
6	.08	.02	.02	.12	.15	.05	.29	.12	.15	.02	.02	4.2
7	.08	.02	.02	.12	4.1	.07	.29	14	.14	.02	1.1	16
8	.09	.02	.02	.12	3.9	.06	.29	32	.13	.03	.13	.87
9	.07	.02	.02	.12	10	.12	.29	.69	1.8	.04	.08	2.0
10	.06	.02	.03	.30	.23	.14	.29	.42	.22	.03	.66	.18
11	.06	.08	.04	.17	.12	.16	.25	.38	.14	.03	.15	.12
12	.08	.07	2.9	.13	.10	.18	1.8	52	.19	.04	.09	.10
13	.10	.04	.39	.13	.10	.08	3.2	16	.15	.02	.06	.06
14	.08	.03	.05	.13	.09	.06	.29	2.7	.13	.02	.04	.04
15	.11	.05	.09	.13	.09	.07	.27	36	.14	.03	.04	.03
16	.11	.05	.03	.18	5.1	.31	.25	4.1	.12	.03	.45	.03
17	.07	.06	.03	.59	.19	.13	.21	1.3	.13	.02	.10	.05
18	.02	.12	.03	.16	.14	.12	.16	.93	.15	.03	.08	.04
19	.01	.17	.03	.17	.11	.12	.15	1.6	.21	.04	.06	24
20	.01	.07	.03	.63	.10	.12	.15	.64	1.1	.03	.05	.09
21	.01	1.5	.03	1.7	.08	.13	.15	.67	2.0	.03	.06	.05
22	.08	.03	.32	3.2	.08	.17	.17	.51	.05	.04	.07	.06
23	.03	.02	5.3	.24	.09	.20	.18	.48	.04	.04	.07	.01
24	.03	.26	.10	.18	.06	.12	.26	.46	.04	.04	.05	.01
25	.01	.07	.04	.17	.06	.12	33	.41	.04	.03	.07	1.7
26	.00	.02	.03	.14	.06	.12	.42	.41	.04	.04	.08	13
27	.01	.02	.04	.14	.06	112	.29	.39	.04	.04	.04	.40
28	.01	.02	17	.14	.06	1.8	.16	.35	.04	.32	.07	2.2
29	.01	.01	2.3	.32	.26	.31	.13	.33	.03	.04	.08	.09
30	6.2	.03	.27	.26	---	.29	.12	.28	.03	.03	.12	1.3
31	.10	---	.19	.17	---	.29	---	.22	---	.02	.05	---
TOTAL	7.91	2.94	29.45	10.69	26.38	117.75	46.45	175.63	8.12	1.25	3.95	66.67
MEAN	.26	.098	.95	.34	.91	3.80	1.55	5.67	.27	.040	.13	2.22
MAX	6.2	1.5	17	3.2	10	112	33	52	2.0	.32	1.1	24
MIN	.00	.01	.02	.12	.06	.05	.12	.12	.03	.02	.01	.00
CFSM	.04	.01	.14	.05	.13	.54	.22	.81	.04	.006	.02	.32
IN.	.04	.02	.16	.06	.14	.62	.25	.93	.04	.01	.02	.35
AC-FT	16	5.8	58	21	52	234	92	348	16	2.5	7.8	132
(††)	.84	.64	2.85	1.27	2.27	3.60	2.48	7.68	.83	.15	.78	6.46

CAL YR 1979 TOTAL 703.12 MEAN 1.93 MAX 108 MIN .00 CFSM .28 IN 3.72 AC-FT 1390 †† 33.25
WTR YR 1980 TOTAL 497.19 MEAN 1.36 MAX 112 MIN .00 CFSM .19 IN 2.63 AC-FT 986 †† 29.85

†† Weighted-mean rainfall on watershed, in inches, based on two rain gages.

08156800 SHOAL CREEK AT 12TH STREET, AUSTIN, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 30°16'35", long 97°45'00", Travis County, Hydrologic Unit 12090205, at downstream side of bridge on 12th Street and 0.6 mi (1.0 km) west of the State Capitol Building in Austin.

DRAINAGE AREA.--12.8 mi² (33.2 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1975 to current year. Periodic discharge measurements only: November 1974 to current year.

GAGE.--Flood-hydrograph recorder and crest-stage gage. Datum of gage is 455.33 ft (138.785 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Additional storm rainfall-runoff data for this site can be obtained from the report "Hydrologic Data for Urban Studies in the Austin, Texas Metropolitan Area, 1979."

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,970 ft³/s (141 m³/s) May 21, 1979, gage height, 15.20 ft (4.633 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,970 ft³/s (141 m³/s) May 21, gage height, 15.20 ft (4.633 m).

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1975 to current year. Water temperatures: January 1975 to current year. Radiochemical analyses: october 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
APR 25...	1315	61	238	7.1	23.0	30	80	7.4	87	3.9
MAY 12...	1100	116	326	7.9	--	--	--	--	--	16
SEP 19...	0445	523	279	7.7	--	--	--	--	--	--
19...	0515	974	250	8.0	--	20	3.4	--	--	--
19...	0545	699	224	7.6	--	20	3.5	--	--	--
19...	0615	549	195	8.1	--	--	--	--	--	--

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
APR 25...	--	--	--	100	38	37	2.8	6.9	.3
MAY 12...	810000	460000	220000	130	44	48	3.6	14	.5
SEP 19...	--	--	--	110	30	40	2.9	9.6	.4
19...	--	--	--	110	28	38	2.8	6.4	.3
19...	--	--	--	94	21	34	2.3	6.6	.3
19...	--	--	--	91	22	33	2.0	4.4	.2

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)
APR 25...	2.7	80	0	36	9.6	.2	4.0	139	84
MAY 12...	3.4	110	0	44	19	.2	5.1	191	--
SEP 19...	4.9	100	0	29	16	.2	3.7	156	--
19...	3.6	100	0	24	12	.2	5.9	142	3740
19...	2.8	90	0	25	10	.2	4.1	129	6670
19...	4.5	84	0	25	5.3	.2	4.6	120	--

08156800 SHOAL CREEK AT 12TH STREET, AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
APR									
25...	16	.62	.010	.63	.030	.84	.87	.200	11
MAY									
12...	--	.60	.030	.63	.230	2.4	2.6	.440	48
SEP									
19...	--	--	--	2.7	--	--	--	--	--
19...	1730	--	--	1.2	--	--	--	--	--
19...	1570	--	--	1.5	--	--	--	--	--
19...	--	--	--	.52	--	--	--	--	--

DATE	TIME	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
APR							
25...	1315	4	30	<1	0	3	40
SEP							
19...	0445	4	30	<1	10	<10	80
19...	0615	3	30	<1	10	<10	20

DATE	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
APR						
25...	2	8	.0	0	0	<3
SEP						
19...	10	2	.0	0	0	8
19...	<10	6	.0	0	0	6

DATE	TIME	GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L)	URANIUM DISSOLVED, EXTRACTION (UG/L)
APR											
25...	1315	<1.6	2.4	<2.3	3.5	2.1	4.2	2.1	3.9	.13	.25

DATE	TIME	PCB TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
APR									
25...	1315	.00	.0	.00	.1	.01	.00	.01	.34

DATE	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)
APR									
25...	.01	.00	.00	.00	.00	.00	.01	.12	.00

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
APR									
25...	.00	.00	.00	.00	0	.00	.11	.01	.01

08157000 WALLER CREEK AT 38TH STREET, AUSTIN, TX

LOCATION.--Lat 30°17'49", long 97°43'36", Travis County, Hydrologic Unit 12090205, on right bank 200 ft (61 m) upstream from bridge at East 38th Street in Austin, 1.1 mi (1.8 km) upstream from West Branch of Waller Creek, and 3.3 mi (5.3 km) upstream from Colorado River.

DRAINAGE AREA.--2.31 mi^2 (5.98 km^2).

PERIOD OF RECORD.--April 1955 to September 1980 (discontinued).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 555.44 ft (169.298 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow slightly regulated at times by a small reservoir at the Perry School (formerly Holy Cross High School) on East 41st Street and a small swimming pool at the school which is drained into the creek every week or two during the summer. Water from other swimming pools also drain into the creek. Station is part of hydrologic research project to study rainfall-runoff relation for small urban areas. Two recording rain gages are located in the watershed. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--25 years, 1.69 ft^3/s (0.0479 m^3/s), 9.94 in/yr (252 mm/yr), 1,220 acre-ft/yr (1.50 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,970 ft^3/s (55.8 m^3/s) Oct. 29, 1960, gage height, 7.77 ft (2.368 m); no flow for many days in 1955-57, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 327 ft^3/s (9.26 m^3/s) May 12 at 1245 hours, gage height, 4.95 ft (1.509 m), no other peak above base of 300 ft^3/s (8.50 m^3/s); minimum daily, 0.33 ft^3/s (0.009 m^3/s) Aug. 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.43	.42	.54	.53	.52	.95	.68	9.1	.80	.66	.69	.35
2	.39	.48	.46	.52	.58	.55	.93	.59	.55	.66	.68	.41
3	.42	.44	.49	.54	.59	.55	.56	.54	.78	.66	.68	.46
4	.37	.52	.49	.53	.53	.58	.59	.53	.77	.66	.41	.44
5	.40	.45	.48	.52	.49	.54	.55	.52	.84	.68	.64	.52
6	.40	.43	.48	.48	.51	.55	.58	.55	.76	.67	.82	13
7	.44	.44	.50	.50	5.6	.58	.55	11	.77	.41	.66	15
8	.43	.46	.48	.52	2.7	.56	.54	21	.77	.65	.63	.94
9	.42	.44	.47	.50	12	.55	.54	.68	.61	.67	.66	6.1
10	.41	.48	.50	.54	.82	.54	.56	.58	.77	.68	4.0	.43
11	.39	.86	.49	.51	.68	.55	.57	.55	.72	.70	.40	.40
12	.42	.45	8.0	.47	.59	.61	1.5	30	.77	.71	.66	.39
13	.43	.48	1.8	.48	.55	.54	4.0	18	.72	.63	.63	.41
14	.43	.46	.52	.52	.49	.54	.60	4.2	.73	.39	.65	.41
15	.45	.46	.53	.53	.55	.54	.64	14	.73	.63	.67	.38
16	.44	.47	.54	.52	6.6	.91	.53	4.7	.46	.64	2.0	.37
17	.43	.49	.49	.58	.68	.54	.53	1.5	.72	.64	.71	.36
18	.40	.48	.49	.55	.58	.53	.54	1.0	.70	.64	.39	.37
19	.41	.49	.50	.51	.55	.55	.54	2.2	.72	.67	.64	5.0
20	.41	.46	.51	1.4	.52	.53	.52	.65	.70	.67	.63	.37
21	.42	.57	.52	3.1	.55	.53	.52	1.0	4.8	.45	.67	.36
22	.41	.46	.52	6.9	1.1	.52	.53	.64	.73	.66	.77	.36
23	.39	.44	14	.88	.58	.56	.54	.61	.49	.65	.68	.39
24	.42	.93	.62	.55	.55	.54	.54	.63	.68	.67	.57	.36
25	.41	.66	.52	.50	.55	1.0	17	.63	.70	.68	.60	8.6
26	.42	.48	.52	.49	.55	.56	.55	.60	.71	.71	.35	16
27	.41	.45	.52	.47	.55	51	.53	.59	.69	.68	.36	1.2
28	.41	.44	18	.49	.52	1.3	.55	.58	.68	2.8	.35	6.1
29	.43	.44	2.1	.53	1.4	.76	.58	.53	.72	.70	.36	.49
30	12	.47	.57	.52	---	.66	.55	.60	.45	.68	.34	3.2
31	.50	---	.53	.52	---	.63	---	.80	---	.68	.33	---
TOTAL	24.54	15.00	57.18	26.20	42.48	69.85	37.94	129.10	25.04	22.08	22.63	83.17
MEAN	.79	.50	1.84	.85	1.46	2.25	1.26	4.16	.83	.71	.73	2.77
MAX	12	.93	18	6.9	12	51	17	30	4.8	2.8	4.0	16
MIN	.37	.42	.46	.47	.49	.52	.52	.52	.45	.39	.33	.35
CFSM	.34	.22	.80	.37	.63	.97	.55	1.80	.36	.31	.32	1.20
IN.	.40	.24	.92	.42	.68	1.12	.61	2.08	.40	.36	.36	1.34
AC-FT	49	30	113	52	84	139	75	256	50	44	45	165
(††)	1.20	.57	3.42	1.20	2.32	3.09	2.03	6.36	.61	.43	1.24	6.66

CAL YR 1979 TOTAL 838.01 MEAN 2.30 MAX 154 MIN .19 CFSM 1.00 IN 13.49 AC-FT 1660 †† 39.71
WTR YR 1980 TOTAL 555.21 MEAN 1.52 MAX 51 MIN .33 CFSM .66 IN 8.94 AC-FT 1100 †† 29.13

†† Weighted-mean rainfall, in inches, based on two rain gages.

08157500 WALLER CREEK AT 23D STREET, AUSTIN, TX

LOCATION.--Lat 30°17'08", long 97°44'01", Travis County, Hydrologic Unit 12090205, on San Jacinto Boulevard, 50 ft (15 m) upstream from bridge on East 23d Street in Austin, and 2.1 mi (3.4 km) upstream from Colorado River.

DRAINAGE AREA.--4.13 mi^2 (10.70 km^2).

PERIOD OF RECORD.--December 1954 to September 1980 (discontinued).
Water-quality records: Periodic chemical, biochemical, and pesticide analyses: October 1970 to September 1971.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 509.95 ft (155.433 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Some regulation by small dam upstream. Diversion of city water into channel during the summer months from municipal and private swimming pools. Some diversions into and out of drainage area by storm sewers. Station is part of a hydrologic research project to study rainfall-runoff relation for small urban areas. Three recording rain gages are located in the watershed. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--25 years, 3.51 ft^3/s (0.099 m^3/s), 11.54 in/yr (293 mm/yr), 2,540 acre-ft/yr (3.13 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,020 ft^3/s (114 m^3/s) Oct. 11, 1973, gage height, 9.00 ft (2.743 m); minimum daily, 0.2 ft^3/s (0.006 m^3/s) at times in 1955-57.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood since 1885 occurred Apr. 22, 1915, stage unknown.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 520 ft^3/s (14.7 m^3/s) Mar. 27, gage height, 4.13 ft (1.259 m), no peak above base of 800 ft^3/s (22.7 m^3/s); minimum daily, 0.44 ft^3/s (0.012 m^3/s) Sept. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.59	.56	.68	.79	.69	1.7	1.6	14	1.0	.83	.85	.44
2	.57	.67	.60	.80	1.2	.72	1.8	.81	.94	.92	.79	.50
3	.59	.58	.63	.75	.72	.76	.99	.70	1.0	.91	.86	.48
4	.53	.62	.68	.78	.72	.79	.92	.71	.98	.75	.71	.48
5	.55	.63	.61	.71	.67	.77	.82	.75	1.0	.83	.80	.47
6	.62	.65	.61	.71	.68	.78	.91	.70	.93	.84	2.3	20
7	.75	.63	.67	.72	11	.82	.90	17	.96	.70	.92	30
8	.54	.70	.62	.75	5.4	.76	.82	29	.92	.78	.82	3.0
9	.56	.60	.64	.76	20	.72	.79	1.1	.91	.78	.82	5.9
10	.52	.56	.68	1.1	1.1	.74	.80	.85	.87	.83	14	.69
11	.51	1.3	.69	.73	1.0	.73	.88	.83	.88	.90	.84	.60
12	.53	.61	17	.64	.90	1.1	3.3	42	.95	.81	.83	.56
13	.51	.61	3.3	.68	.83	.75	8.0	27	.93	.76	.76	.55
14	.53	.58	.75	.69	.79	.74	.95	6.8	.85	.72	.82	.61
15	.58	.58	.80	.71	.86	.70	.88	22	.87	.79	.87	.49
16	.61	.65	.68	.74	13	1.8	.85	7.4	.77	1.0	5.0	.54
17	.66	.76	.65	1.1	1.0	.76	.84	2.4	.88	1.0	.95	.57
18	.56	.63	.72	.74	.97	.71	.81	2.3	.93	.83	.73	.58
19	.61	.67	.70	.67	.86	.77	.77	4.0	.92	.80	.67	11
20	.53	.59	.77	3.5	.82	.72	.85	1.1	.82	.75	.98	.59
21	.52	1.6	.77	5.5	.83	.72	.77	2.0	7.6	.78	.90	.51
22	.51	.54	.88	12	1.2	.70	.86	1.0	.90	.83	1.0	.51
23	.48	.59	24	1.2	.78	.74	.86	1.1	.71	.90	.79	.53
24	.54	2.2	1.0	.84	.75	.74	.84	.95	1.2	.98	.80	.62
25	.52	1.1	.77	.71	.77	2.5	27	.92	.92	.88	.88	21
26	.57	.66	.77	.64	.80	.82	.83	.93	1.0	.87	.60	21
27	.51	.61	.79	.79	.79	83	.75	.89	.93	.81	.51	4.5
28	.50	.56	29	.88	.79	2.5	.78	.82	.89	5.5	.54	11
29	.56	.59	3.3	.98	2.7	1.4	.86	.84	.80	.83	.54	.97
30	23	.61	.87	.84	---	1.0	.82	.96	.85	.81	.49	5.1
31	.83	---	.77	.70	---	.98	---	.92	---	.84	.47	---
TOTAL	39.99	22.24	95.40	43.15	72.62	112.44	62.85	192.78	34.11	30.56	42.84	143.79
MEAN	1.29	.74	3.08	1.39	2.50	3.63	2.10	6.22	1.14	.99	1.38	4.79
MAX	23	2.2	29	12	20	83	27	42	7.6	5.5	14	30
MIN	.48	.54	.60	.64	.67	.70	.75	.70	.71	.70	.47	.44
CFSM	.31	.18	.75	.34	.61	.88	.51	1.51	.28	.24	.33	1.16
IN.	.36	.20	.86	.39	.65	1.01	.57	1.74	.31	.28	.39	1.29
AC-FT	79	44	189	86	144	223	125	382	68	61	85	285
(††)	1.32	.56	3.38	1.19	2.35	3.14	2.03	6.31	.50	.42	1.50	6.82

CAL YR 1979 TOTAL 1521.29 MEAN 4.17 MAX 270 MIN .48 CFSM 1.01 IN 13.70 AC-FT 3020 †† 41.89
WTR YR 1980 TOTAL 892.77 MEAN 2.44 MAX 83 MIN .44 CFSM .59 IN 8.04 AC-FT 1770 †† 29.52

†† Weighted-mean rainfall, in inches, based on three rain gages.

08157900 TOWN LAKE AT AUSTIN, TX

LOCATION.--Lat 30°14'56", long 97°43'03", Travis County, Hydrologic Unit 12090205, at Longhorn Dam on the Colorado River at Austin, 1.5 mi (2.4 km) downstream from Interstate Highway 35, and 2.3 mi (3.7 km) southeast of the State Capitol in Austin.

DRAINAGE AREA.--38,390 mi² (99,430 km²), approximately, of which 12,880 mi² (33,360 km²) probably is noncontributing.

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: Feburary 1975 to current year.

301559097424801 TOWN LAKE (AUSTIN) SITE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
03...	1115	1.0	500	7.8	14.0	8.7	84
03...	1117	10	500	7.8	14.0	8.7	84
03...	1119	25	500	7.8	14.0	8.7	84
28...	1115	1.0	510	7.9	18.0	7.9	85
28...	1117	10	515	7.9	17.0	7.9	83
28...	1119	24	515	7.9	17.0	7.8	82
MAY							
19...	1159	1.0	470	7.7	24.0	7.8	93
19...	1201	10	449	7.6	22.5	6.4	74
19...	1203	23	449	7.4	20.5	4.8	53
JUL							
31...	1120	1.0	492	7.8	26.0	7.0	86
31...	1123	10	492	7.8	24.5	7.3	87
31...	1125	15	492	7.8	24.0	7.2	86
31...	1128	24	492	7.8	24.0	7.0	83

301500097424801 TOWN LAKE (AUSTIN) SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR										
03...	1037	1.0	515	7.8	14.0	2.30	0	1.9	8.8	85
03...	1039	10	515	7.8	14.0	--	--	--	8.8	85
03...	1041	22	515	7.8	14.0	--	2	2.0	8.8	85
28...	1042	1.0	477	7.8	18.0	.90	10	7.2	7.6	82
28...	1044	10	491	7.8	17.0	--	--	--	7.6	80
28...	1046	20	491	7.8	17.0	--	--	--	7.5	79
28...	1048	23	491	7.7	17.0	--	5	3.6	7.5	79
MAY										
19...	1131	1.0	470	7.7	23.5	1.37	5	2.6	7.8	92
19...	1133	10	466	7.5	21.5	--	--	--	6.0	68
19...	1135	20	463	7.4	20.5	--	--	--	4.9	56
19...	1137	30	463	7.3	20.0	--	5	15	3.9	43
JUL										
31...	1040	1.0	492	7.8	26.0	2.29	0	1.2	7.0	86
31...	1045	10	492	7.8	24.0	--	--	--	7.3	87
31...	1050	15	492	7.8	24.0	--	--	--	7.0	83
31...	1055	23	492	7.8	24.0	--	0	.90	7.0	83

DATE	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
MAR										
03...	.1	780	8	2	210	38	51	20	26	.8
03...	--	--	--	--	--	--	--	--	--	--
03...	.3	--	--	--	210	38	51	20	27	.8
28...	1.3	>2000	2000	780	190	35	45	19	23	.7
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	1.2	--	--	--	200	33	46	20	24	.7
MAY										
19...	1.0	3100	200	43	210	32	57	17	15	.4
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	.5	--	--	--	180	27	45	17	18	.6
JUL										
31...	.6	620	440	K3	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	.3	--	--	--	200	32	44	21	24	.7

301500097424801 TOWN LAKE (AUSTIN) SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)
MAR										
03...	2.8	210	0	36	40	.2	7.3	286	0	0
03...	--	--	--	--	--	--	--	--	--	--
03...	2.8	210	0	34	41	.2	7.2	286	2	2
28...	3.2	190	0	32	39	.3	7.2	262	0	0
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	3.2	200	0	33	39	.3	7.3	271	5	6
MAY										
19...	2.4	220	0	25	22	.2	8.5	256	13	13
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	2.8	190	0	27	31	.2	8.3	243	24	15
JUL										
31...	3.0	200	0	--	--	--	--	--	0	0
31...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	3.0	200	0	30	44	.3	8.8	274	1	1

DATE	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR										
03...	.19	.010	.20	.070	.33	.40	.60	.020	<10	3
03...	.15	.010	.16	.070	.33	.40	.56	.030	10	10
03...	.27	.010	.28	.100	.53	.63	.91	.030	<10	3
28...	.12	.010	.13	.080	.60	.68	.81	.070	<10	3
28...	.04	.000	.04	.040	.79	.83	.87	.050	30	0
28...	--	--	--	--	--	--	--	--	--	--
28...	.14	.010	.15	.100	.48	.58	.73	.040	<10	4
MAY										
19...	.32	.010	.33	.030	.45	.48	.81	.010	<10	<3
19...	.22	.010	.23	.100	.90	1.0	1.2	.010	20	0
19...	--	--	--	--	--	--	--	--	--	--
19...	.17	.010	.18	.150	.73	.88	1.1	.050	<10	20
JUL										
31...	.12	.010	.13	.030	.59	.62	.75	.010	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	.11	.010	.12	.030	.64	.67	.79	.010	<10	5

301503097424701 TOWN LAKE (AUSTIN) SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
03...	1125	1.0	520	7.8	14.0	8.7	84
03...	1127	10	520	7.8	14.0	8.7	84
03...	1129	15	520	7.8	14.0	8.8	85
28...	1105	1.0	477	7.8	18.5	7.5	82
28...	1107	12	491	7.8	17.0	7.3	77
MAY							
19...	1116	1.0	479	7.7	24.0	8.0	95
19...	1118	10	466	7.5	21.5	6.5	74
19...	1120	17	463	7.4	20.5	5.1	57
JUL							
31...	1130	1.0	492	7.8	26.0	7.3	90
31...	1132	10	492	7.8	24.0	7.3	87
31...	1135	17	492	7.8	24.0	7.3	87

TOWN LAKE AT AUSTIN, TX--Continued

301500097440801 TOWN LAKE (AUSTIN) SITE BR

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
03...	1145	1.0	555	7.7	14.0	8.7	84
03...	1147	13	555	7.7	14.0	8.4	82
28...	1130	1.0	301	7.6	17.0	7.1	75
28...	1132	10	290	7.6	16.5	7.0	73
28...	1134	13	290	7.6	16.5	7.0	73
MAY							
19...	1228	1.0	500	7.5	24.0	7.3	87
19...	1230	12	496	7.4	22.5	5.9	68
JUL							
31...	1150	1.0	492	7.8	24.5	7.1	85
31...	1152	10	492	7.8	24.0	7.1	85
31...	1155	21	492	7.8	24.0	7.1	85

301504097440901 TOWN LAKE (AUSTIN) SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
03...	1135	1.0	555	7.7	14.0	8.5	83
03...	1137	10	555	7.7	14.0	8.5	83
03...	1139	20	555	7.7	14.0	8.4	82
03...	1141	25	555	7.7	14.0	8.4	82
28...	1125	1.0	280	7.7	17.0	7.2	76
28...	1127	10	301	7.7	16.5	7.2	75
28...	1129	20	301	7.7	16.5	7.1	74
MAY							
19...	1215	1.0	500	7.5	23.5	7.4	87
19...	1217	10	498	7.4	22.5	6.6	77
19...	1219	20	496	7.4	22.0	5.8	67
19...	1221	25	496	7.4	22.0	5.9	68
JUL							
31...	1140	1.0	492	7.8	25.0	7.2	87
31...	1143	10	492	7.8	24.0	7.1	85
31...	1145	20	492	7.8	24.0	7.0	83
31...	1148	28	492	7.8	24.0	6.9	82

301544097445201 TOWN LAKE (AUSTIN) SITE CR

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
03...	1208	1.0	588	7.6	14.0	10.7	104
03...	1210	8.0	588	7.6	14.0	10.7	104
28...	1155	1.0	489	7.4	20.0	6.7	74
28...	1157	6.0	421	7.6	17.0	6.5	68
MAY							
19...	1255	1.0	496	7.5	22.0	7.6	87
19...	1257	9.0	496	7.5	21.5	7.6	86
JUL							
31...	1217	1.0	496	7.7	23.0	6.8	79
31...	1220	8.0	496	7.7	23.0	6.8	79

301546097445101 TOWN LAKE (AUSTIN) SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
03...	1157	1.0	588	7.6	14.0	10.5	102
03...	1159	10	588	7.6	14.0	10.5	102
03...	1201	15	588	7.6	14.0	10.5	102
28...	1145	1.0	454	7.5	19.5	7.1	78
28...	1147	10	358	7.6	17.0	6.8	72
28...	1149	15	328	7.6	17.0	6.7	71
MAY							
19...	1242	1.0	496	7.5	21.5	7.7	88
19...	1244	10	496	7.5	21.5	7.7	88
19...	1246	19	496	7.4	21.5	7.8	89
JUL							
31...	1210	1.0	496	7.7	24.0	6.9	82
31...	1213	10	492	7.8	23.5	6.9	80
31...	1215	14	492	7.8	23.5	6.7	79

301556097452301 TOWN LAKE (AUSTIN) SITE DR

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
03...	1240	1.0	569	7.7	14.0	10.8	105
03...	1242	10	569	7.7	14.0	10.8	105
03...	1244	15	569	7.7	14.0	10.9	106
28...	1220	1.0	525	7.2	20.5	6.2	70
28...	1222	11	480	7.6	17.0	6.1	--
MAY							
19...	1325	1.0	496	7.5	23.0	7.8	91
19...	1327	13	496	7.5	21.5	7.3	83
JUL							
31...	1255	1.0	500	7.6	23.5	7.3	86
31...	1258	12	500	7.7	23.0	6.8	79

301558097452201 TOWN LAKE (AUSTIN) SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR										
03...	1220	1.0	569	7.8	14.0	5.5	2	1.3	10.7	104
03...	1222	10	569	7.8	14.0	--	--	--	10.7	104
03...	1224	18	569	7.8	14.0	--	5	.80	10.6	103
28...	1205	1.0	507	7.2	19.5	--	20	15	6.1	68
28...	1207	10	480	7.7	17.0	--	--	--	6.8	72
28...	1209	21	463	7.7	17.0	--	20	7.8	6.4	67
MAY										
19...	1306	1.0	492	7.5	22.0	2.19	5	1.8	8.0	92
19...	1308	10	490	7.6	21.5	--	--	--	7.7	88
19...	1310	19	490	7.6	21.5	--	0	6.7	7.7	88
JUL										
31...	1230	1.0	492	7.8	22.5	2.29	0	.80	6.7	77
31...	1235	10	492	7.8	22.5	--	--	--	6.7	77
31...	1240	22	492	7.8	22.5	--	0	1.1	6.6	76

TOWN LAKE AT AUSTIN, TX--Continued

301558097452201 TOWN LAKE (AUSTIN) SITE DC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
MAR										
03...	.6	440	82	49	260	44	65	23	23	.6
03...	--	--	--	--	--	--	--	--	--	--
03...	.1	--	--	--	250	39	63	23	22	.6
28...	1.2	>4600	4600	7200	230	42	61	19	18	.5
28...	--	--	--	--	--	--	--	--	--	--
28...	.9	--	--	--	190	38	43	19	22	.7
MAY										
19...	.4	460	140	36	210	32	52	20	18	.5
19...	--	--	--	--	--	--	--	--	--	--
19...	.5	--	--	--	200	32	49	20	19	.6
JUL										
31...	.4	460	100	K14	190	25	41	21	25	.8
31...	--	--	--	--	--	--	--	--	--	--
31...	.4	--	--	--	190	25	41	21	25	.8

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)
MAR										
03...	2.2	260	0	34	37	.2	5.4	318	0	0
03...	--	--	--	--	--	--	--	--	--	--
03...	2.2	260	0	46	36	.2	5.1	326	0	0
28...	2.4	230	0	31	30	.3	9.1	284	14	5
28...	--	--	--	--	--	--	--	--	--	--
28...	3.2	180	0	33	37	.3	7.5	254	10	8
MAY										
19...	2.6	220	0	28	30	.2	8.2	267	14	15
19...	--	--	--	--	--	--	--	--	--	--
19...	2.7	210	0	29	35	.3	8.1	267	16	3
JUL										
31...	3.3	200	0	29	45	.3	8.2	271	0	0
31...	--	--	--	--	--	--	--	--	--	--
31...	3.3	200	0	29	44	.3	8.3	271	0	0

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
MAR										
03...	.50	.010	.51	.030	.26	.29	.80	.000	<10	4
03...	.53	.010	.54	.010	.85	.86	1.4	.000	10	10
03...	.28	.010	.29	.010	.36	.37	.66	.020	<10	4
28...	.46	.010	.47	.060	.77	.83	1.3	.060	<10	8
28...	.11	.000	.11	.060	.72	.78	.89	.040	40	10
28...	.10	.010	.11	.100	.77	.87	.98	.050	30	10
MAY										
19...	.21	.010	.22	.030	.34	.37	.59	.010	<10	10
19...	.13	.010	.14	.010	.44	.45	.59	.030	20	20
19...	.18	.010	.19	.030	.37	.40	.59	.010	<10	10
JUL										
31...	.09	.000	.09	.010	.58	.59	.68	.010	<10	8
31...	.09	.010	.10	.010	.99	1.0	1.1	.010	0	10
31...	.09	.010	.10	.010	.95	.96	1.1	.010	<10	8

301712097470701 TOWN LAKE (AUSTIN) SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR										
03...	1311	1.0	527	7.9	12.5	1.40	2	2.6	9.8	92
03...	1313	12	527	7.8	12.5	--	5	3.3	9.9	93
28...	1245	1.0	505	7.3	19.0	--	10	3.0	7.5	82
28...	1247	12	488	7.6	17.5	--	10	2.9	6.4	68
MAY										
19...	1342	1.0	483	7.8	21.5	1.52	5	2.9	8.3	94
19...	1344	10	483	7.8	21.5	--	--	--	8.2	93
19...	1346	19	483	7.8	21.5	--	5	2.1	8.2	93
JUL										
31...	1320	1.0	492	7.9	23.0	1.43	0	1.3	7.4	86
31...	1325	10	492	7.8	22.5	--	--	--	6.9	79
31...	1330	15	492	7.8	22.5	--	0	3.3	6.9	80

DATE	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
MAR										
03...	.6	820	6	12	210	42	48	23	27	.8
03...	.2	--	--	--	220	47	50	23	25	.7
28...	.8	220	220	230	220	37	54	20	20	.6
28...	1.0	--	--	--	200	36	47	20	22	.7
MAY										
19...	.8	10000	44	10	200	33	46	20	20	.6
19...	--	--	--	--	--	--	--	--	--	--
19...	.8	--	--	--	200	33	46	20	20	.6
JUL										
31...	.5	100	28	K4	190	30	43	21	24	.8
31...	--	--	--	--	--	--	--	--	--	--
31...	.5	--	--	--	190	23	42	20	23	.7

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)
MAR										
03...	3.3	210	0	42	43	.2	8.1	298	6	5
03...	3.2	210	0	35	43	.2	7.8	290	0	0
28...	2.6	220	0	32	35	.3	8.2	281	0	0
28...	3.1	200	0	32	40	.3	8.2	271	0	0
MAY										
19...	2.9	200	0	28	33	.2	8.1	257	20	16
19...	--	--	--	--	--	--	--	--	--	--
19...	2.9	200	0	29	33	.2	8.1	258	126	4
JUL										
31...	3.2	200	0	29	45	.3	8.7	273	1	0
31...	--	--	--	--	--	--	--	--	--	--
31...	3.2	200	0	30	45	.3	8.7	271	3	1

DATE	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR										
03...	.10	.000	.10	.030	.38	.41	.51	.010	<10	<1
03...	.09	.010	.10	.030	.40	.43	.53	.010	<10	2
28...	.43	.000	.43	.040	.77	.81	1.2	.030	<10	3
28...	.13	.000	.13	.080	2.7	2.8	2.9	.030	<10	20
MAY										
19...	.18	.010	.19	.010	.43	.44	.63	.010	<10	<3
19...	.17	.010	.18	.010	.40	.41	.59	.020	10	0
19...	.17	.010	.18	.030	.26	.29	.47	.010	<10	4
JUL										
31...	.08	.010	.09	.000	.51	.51	.60	.010	<10	1
31...	--	--	--	--	--	--	--	--	--	--
31...	.08	.010	.09	.000	.64	.64	.73	.010	<10	<1

TOWN LAKE AT AUSTIN, TX--Continued

301601097454001 TOWN LAKE (AUSTIN) SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
03...	1255	1.0	647	7.3	19.0	11.8	127
28...	1228	1.0	607	7.2	22.5	11.7	136
MAY							
19...	1416	1.0	496	7.6	23.5	9.5	112
19...	1418	8.0	496	7.6	23.5	9.5	112
JUL							
31...	1305	1.0	631	7.2	23.5	10.7	126
31...	1310	6.0	631	7.2	23.0	10.4	121

301500097424801 TOWN LAKE (AUSTIN) SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L)	URANIUM DISSOLVED, EXTRACTION (UG/L)
JUL												
31...	1040	1.0	<3.1	<.3	<4.6	<.4	3.0	.4	2.9	.4	.15	1.2
31...	1055	23	<3.3	<.3	<4.8	<.4	4.9	<.4	4.6	<.4	.14	1.3

301712097470701 TOWN LAKE (AUSTIN) SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L)	URANIUM DISSOLVED, EXTRACTION (UG/L)
JUL												
31...	1320	1.0	<3.5	<.3	<5.2	<.4	4.3	.7	4.1	.7	.08	1.1
31...	1330	15	<2.9	<.3	<4.3	<.4	4.0	.6	3.8	.6	.58	1.1

TOWN LAKE AT AUSTIN--Continued

301500097424801 TOWN LAKE (AUSTIN) SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMP-LING DEPTH (FT)	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)
MAR									
03...	1037	1.0	.0	.00	.00	.0	.00	.00	.00
03...	1041	22	.0	.00	.00	.0	.00	.00	.00
JUL									
31...	1040	1.0	.0	.00	.00	.0	.00	.00	.00
31...	1055	23	.0	.00	.00	.0	.00	.00	.00

DATE	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
MAR									
03...	.01	.00	.00	.00	.00	.00	.00	.00	.00
03...	.01	.00	.00	.00	.00	.00	.00	.00	.00
JUL									
31...	.00	.00	.00	.00	.00	.00	.00	.00	.00
31...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
MAR								
03...	.00	.00	.00	0	.00	.02	.00	.00
03...	.00	.00	.00	0	.00	.03	.00	.00
JUL								
31...	.00	.00	.00	0	.00	.15	.00	.00
31...	.00	.00	.00	0	.00	.20	.00	.00

08158000 COLORADO RIVER AT AUSTIN, TX
(National stream-quality accounting network)

LOCATION.--Lat 30°14'40", long 97°41'39", Travis County, Hydrologic Unit 12090205, on right bank 1,000 ft (305 m) upstream from upstream bridge on U.S. Highway 183 in Austin, 1.4 mi (2.3 km) downstream from Longhorn Dam, and at mile 290.3 (467.1 km).

DRAINAGE AREA.--38,400 mi^2 (99,500 km^2), approximately, of which 12,880 mi^2 (33,360 km^2) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1898 to current year. Records of daily discharge for Dec. 13-26, 1914, and Feb. 9-17, 1915, published in WSP 408, have been found unreliable and should not be used.

REVISED RECORDS.--WSP 508: 1915(m). WSP 528: 1900(M), 1918(m). WSP 548: 1901-16. WSP 1342: Drainage area. WSP 1562: 1908, 1929(M), 1936.

GAGE.--Water-stage recorder. Datum of gage is 402.27 ft (122.612 m) National Geodetic Vertical Datum of 1929. Prior to June 19, 1939, all records collected at or near Congress Avenue Bridge 3.9 mi (6.3 km) upstream at datum 19.6 ft (5.97 m) higher; prior to June 18, 1915, nonrecording gages, recording gages thereafter; June 20, 1939, to Oct. 16, 1963, at site 1,000 ft (305 m) downstream from present site at datum 5.0 ft (1.52 m) higher.

REMARKS.--Water-discharge records fair. National Weather Service gage-height telemeter at station. Since 1937, at least 10 percent of drainage area regulated by reservoirs. Flow largely regulated by Lake Travis (station 08154500). The city of Austin reported that 85,660 acre-ft (106 hm^3) was diverted for municipal use above station and 45,120 acre-ft (55.6 hm^3) of treated sewage was returned below station. Many other diversions above Lake Buchanan for irrigation, municipal supplies, and oilfield operations.

AVERAGE DISCHARGE.--38 years (water years 1899-1936) unregulated, 2,711 ft^3/s (76.78 m^3/s), 1,964,000 acre-ft/yr (2.42 km^3/yr); 44 years (water years 1937-80) regulated, 2,008 ft^3/s (56.87 m^3/s), 1,454,800 acre-ft/yr (1.79 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 481,000 ft^3/s (13,600 m^3/s) June 15, 1935, gage height, 50 ft (15.2 m), present site and datum, from floodmark; minimum daily, 10 ft^3/s (0.28 m^3/s) Dec. 17, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1833, 51 ft (15.5 m) July 7, 1869, present site and datum (adjusted to present site on basis of record for flood of June 15, 1935), determined from information concerning stage at former site furnished by Dean T. U. Taylor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,170 ft^3/s (146 m^3/s) June 15 at 2230 hours, gage height, 8.87 ft (2.704 m); minimum daily, 30 ft^3/s (0.85 m^3/s) Feb. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1130	62	87	62	48	129	496	2550	2450	2260	1900	2890
2	914	84	88	92	51	121	439	2190	2450	2280	1800	2750
3	912	76	702	80	49	622	412	2150	2500	2360	2000	2630
4	940	78	124	73	48	117	380	2190	2500	2110	2250	2730
5	113	69	118	76	64	94	408	2210	2500	2270	2250	2350
6	117	75	94	78	48	94	403	2220	2500	2250	2050	2500
7	71	80	85	76	147	98	412	2560	2500	2240	2050	2230
8	71	47	82	71	142	97	948	1980	2550	2280	1800	1400
9	101	69	79	76	236	94	1120	1230	2450	2020	1600	1800
10	71	42	84	81	69	93	968	1770	2500	2060	342	1890
11	109	69	87	96	67	79	918	1770	2550	2350	1000	1820
12	81	42	189	75	66	99	1350	2460	2450	2030	1950	1550
13	75	59	135	71	64	74	1030	1440	2450	2010	2400	1530
14	103	59	77	76	68	476	1160	1450	2450	2060	2350	1540
15	87	50	78	77	30	480	1660	1890	2650	1930	2350	1520
16	288	45	90	78	172	416	1930	780	2800	1870	2450	1690
17	78	55	69	87	62	358	2020	922	2600	1880	2300	1770
18	68	63	71	96	63	381	1690	528	2350	1860	2300	1740
19	91	65	73	82	64	397	1760	1360	2650	1990	2350	2070
20	107	86	73	104	61	382	1720	1110	2700	2000	2400	2020
21	72	142	85	85	89	461	1600	1720	2500	1880	2400	1960
22	80	71	73	193	110	492	1860	2480	2500	1890	2350	1920
23	114	98	219	78	82	475	2380	2200	2450	1730	2500	1990
24	106	99	102	73	88	488	2360	2200	2450	1800	2500	1970
25	113	75	83	68	88	694	2780	2300	2650	1940	2500	1980
26	118	118	73	70	89	771	2360	2250	2500	2160	2500	1870
27	116	84	72	175	92	1260	2460	2400	2500	1900	2650	1300
28	115	74	267	2230	97	745	2390	2550	2550	1680	2650	1140
29	110	69	206	2840	94	749	2440	2500	2500	1780	2650	1470
30	217	77	90	1820	---	760	2430	2450	2500	2180	2700	930
31	92	---	94	36	---	731	---	2440	---	1980	2800	---
TOTAL	6780	2182	3849	9275	2448	12327	44284	60250	75650	63030	68092	56950
MEAN	219	72.7	124	299	84.4	398	1476	1944	2522	2033	2197	1898
MAX	1130	142	702	2840	236	1260	2780	2560	2800	2360	2800	2890
MIN	68	42	69	36	30	74	380	528	2350	1680	342	930
AC-FT	13450	4330	7630	18400	4860	24450	87840	119500	150100	125000	135100	113000

CAL YR 1979 TOTAL 438009 MEAN 1200 MAX 10600 MIN 42 AC-FT 868800
WTR YR 1980 TOTAL 405117 MEAN 1107 MAX 2890 MIN 30 AC-FT 803500

08158000 COLORADO RIVER AT AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1947 to October 1973. Chemical, biochemical, and pesticide analyses: October 1973 to current year. Sediment records: October 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1947 to current year.
WATER TEMPERATURES: October 1947 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 737 micromhos Jan. 12, 1964; minimum daily, 243 micromhos Dec. 2, 1953.
WATER TEMPERATURES: Maximum daily, 33.0°C July 25, 1979;minimum daily, 6.0°C Jan. 28, 1948, Feb. 4, 1949.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 643 micromhos Oct. 29; minimum daily, 326 micromhos May 6.
WATER TEMPERATURES: Maximum daily, 25.0°C Sept. 24; minimum daily, 10.5°C Feb. 1, 2.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 22...	1120	88	560	7.6	23.0	.20	9.2	108	1.0	22	K18
NOV 05...	1050	94	560	7.5	21.0	.20	9.5	107	1.1	24	28
DEC 10...	1125	91	613	7.5	17.0	.50	9.9	102	.6	K6	480
JAN 07...	1100	80	548	7.3	10.0	--	12.0	107	1.2	1500	170
FEB 04...	1120	69	494	7.4	10.0	.10	12.5	111	1.0	68	K9
MAR 03...	1100	1420	490	7.7	13.0	280	15.0	143	1.1	73	66
APR 07...	0900	102	519	7.5	20.0	1.4	8.6	96	.5	K7	K3
MAY 12...	0940	191	510	7.3	20.0	3.0	8.2	91	.8	140	36
JUN 09...	1020	3960	484	7.6	23.0	3.4	9.0	105	.5	44	K12
JUL 07...	1015	3020	497	7.6	22.0	1.0	2.6	30	.7	62	47
AUG 11...	1030	76	528	7.2	27.0	.70	5.2	66	.9	1000	260
SEP 08...	1120	580	445	7.5	24.0	5.5	7.2	86	.6	4600	920

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 22...	240	48	60	21	25	.7	2.9	230	0	32	41
NOV 05...	230	31	60	19	21	.6	2.8	240	0	34	36
DEC 10...	270	45	72	23	26	.7	2.3	280	0	33	37
JAN 07...	240	35	65	20	23	.6	2.4	250	0	33	34
FEB 04...	200	48	47	21	28	.9	3.0	190	0	35	47
MAR 03...	210	37	51	20	24	.7	2.9	210	0	34	42
APR 07...	210	42	51	21	24	.7	3.1	210	0	32	37
MAY 12...	200	39	45	21	22	.7	3.1	200	0	31	40
JUN 09...	200	40	44	21	23	.7	3.3	190	0	30	41
JUL 07...	180	32	40	20	24	.8	3.2	190	0	28	42
AUG 11...	200	40	47	21	25	.8	3.4	200	0	27	46
SEP 08...	170	29	38	18	22	.7	3.6	170	0	28	44

08158000 COLORADO RIVER AT AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)
OCT 22...	.2	10	327	308	.47	.47	.030	.050	.44	.41
NOV 05...	.2	9.9	307	304	.59	.57	.020	.050	.42	.43
DEC 10...	.2	11	340	344	.30	.30	.010	.010	.65	.53
JAN 07...	.3	7.2	312	311	.74	.74	.000	.030	.95	.97
FEB 04...	.2	8.1	288	284	.13	.14	.010	.020	.33	.32
MAR 03...	.3	7.2	287	286	.16	.24	.070	.090	.44	.28
APR 07...	.3	.2	285	273	.09	.10	.080	.080	.44	.42
MAY 12...	.3	8.4	278	268	.05	.15	.080	.120	.41	.50
JUN 09...	.2	8.0	272	264	.13	.13	.080	.090	.82	.39
JUL 07...	.4	7.9	277	256	.09	.09	.050	.030	1.1	.58
AUG 11...	.3	9.6	280	277	.11	.11	.060	.070	1.0	1.0
SEP 08...	.3	7.9	273	246	.06	.01	.030	.040	.79	.44

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	CARBON, ORGANIC SUSPENDED (MG/L AS C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 22...	.47	.46	.020	.010	--	2.4	.1	6	1.4	63
NOV 05...	.44	.48	.010	.010	16	--	--	24	6.1	71
DEC 10...	.66	.54	.020	.040	10	--	--	9	2.2	38
JAN 07...	.95	1.0	.240	.010	1.9	--	--	21	4.5	56
FEB 04...	.34	.34	.020	.010	--	3.0	.8	7	1.3	86
MAR 03...	.51	.37	.040	.010	3.2	--	--	26	100	67
APR 07...	.52	.50	.020	.040	4.3	--	--	16	4.4	83
MAY 12...	.49	.62	.010	.020	8.2	--	--	80	41	99
JUN 09...	.90	.48	.040	.020	--	10	.2	325	3480	20
JUL 07...	1.1	.61	.030	.010	2.7	--	--	11	90	84
AUG 11...	1.1	1.1	.020	.030	--	9.9	.1	81	17	36
SEP 08...	.82	.48	.050	.020	4.4	--	--	31	49	95

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUSPENDED TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)
OCT 22...	1120	1	0	1	200	100	70	0	0	<1	0
NOV 05...	1050	--	--	--	--	--	--	--	--	--	--
JAN 07...	1100	--	--	--	--	--	--	--	--	--	--
FEB 04...	1120	1	0	1	0	0	70	1	0	3	10
APR 07...	0900	--	--	--	--	--	--	--	--	--	--
JUN 09...	1020	1	0	1	100	40	60	1	--	<1	0
JUL 07...	1015	--	--	--	--	--	--	--	--	--	--
AUG 11...	1030	1	0	2	0	0	70	2	--	<1	0

08158000 COLORADO RIVER AT AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)
OCT 22...	0	0	0	0	<3	2	2	0	10	--	30
NOV 05...	--	--	--	--	--	--	--	--	--	--	--
JAN 07...	--	--	--	--	--	--	--	--	--	--	--
FEB 04...	10	0	0	0	<3	0	0	0	50	40	<10
APR 07...	--	--	--	--	--	--	--	--	--	--	--
JUN 09...	0	0	0	--	<3	6	3	3	80	--	<10
JUL 07...	--	--	--	--	--	--	--	--	--	--	--
AUG 11...	0	0	1	--	<3	15	14	1	90	--	<10

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI)
OCT 22...	4	4	0	20	10	10	.3	.1	.2	2	0
NOV 05...	--	--	--	--	--	--	--	--	--	--	--
JAN 07...	--	--	--	--	--	--	--	--	--	--	--
FEB 04...	4	4	0	20	10	10	.2	.0	.7	0	0
APR 07...	--	--	--	--	--	--	--	--	--	--	--
JUN 09...	3	1	2	20	20	4	.2	.1	.1	6	3
JUL 07...	--	--	--	--	--	--	--	--	--	--	--
AUG 11...	5	5	0	30	0	30	.8	.8	.0	3	0

DATE	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 22...	2	1	1	0	0	0	0	0	0	5
NOV 05...	--	--	--	--	0	--	--	--	--	--
JAN 07...	--	--	--	--	0	--	--	--	--	--
FEB 04...	0	0	0	0	0	0	0	20	20	5
APR 07...	--	--	--	--	0	--	--	--	--	--
JUN 09...	3	0	0	0	0	0	0	20	--	<3
JUL 07...	--	--	--	--	0	--	--	--	--	--
AUG 11...	3	0	0	0	0	0	0	40	30	8

DATE	LENGTH OF EXPOSURE (DAYS)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2)	CHLOR-B PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2)	BIOMASS CHLOROPHYLL RATIO PERIPHYTON (UNITS)
OCT 22...	27	1.02	1.18	8.42	2.00	19.0
FEB 04...	28	2.20	2.44	1.09	.040	220

08158000 COLORADO RIVER AT AUSTIN, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	NOV 5,79	MAR 3,80	MAY 12,80	JUN 9,80
TIME	1050	1100	0940	1020
TOTAL CELLS/ML	170	1000	0	300
DIVERSITY: DIVISION	1.3	0.7	0.0	1.5
.CLASS	1.3	0.7	0.0	1.5
..ORDER	1.3	0.7	0.0	2.1
...FAMILY	1.3	1.8	0.0	2.6
....GENUS	1.3	1.8	0.0	2.8

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...OOCYSTACEAE								
....OOCYSTIS	--	-	--	-	--	-	52#	17
...SCENEDESMACEAE								
....SCENEDESMUS	100#	58	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	--	-	--	-	13	4
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....COSCINODISCUS	--	-	--	-	--	-	--	-
....CYCLOTELLA	--	-	--	-	--	-	26	9
....MELOSIRA	--	-	--	-	--	-	26	9
..PENNALES								
...ACHNANTHACEAE								
....COCCONEIS	--	-	--	-	--	-	--	-
....RHOICOSPHENIA	--	-	--	-	--	-	52#	17
...CYMBELLACEAE								
....CYMBELLA	--	-	72	7	--	-	13	4
...DIATOMACEAE								
....DIATOMA	--	-	72	7	--	-	--	-
...FRAGILARIACEAE								
....FRAGILARIA	--	-	--	-	--	-	--	-
...NAVICULACEAE								
....NAVICULA	14	8	86	8	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	--	-	600#	58	--	-	39	13
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	57#	33	--	-	--	-	--	-
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	210#	21	--	-	--	-
....PHORMIDIUM	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	--	-	78#	26
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08158000 COLORADO RIVER AT AUSTIN, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	JUL 7,80	AUG 11,80	SEP 8,80
TIME	1015	1030	1120
TOTAL CELLS/ML	410	64	490
DIVERSITY: DIVISION	0.7	0.0	1.0
.CLASS	0.7	0.0	1.0
..ORDER	1.0	0.7	1.2
...FAMILY	1.2	0.7	1.3
....GENUS	1.2	0.7	2.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...OOCYSTACEAE						
....OOCYSTIS	--	-	--	-	--	-
...SCENEDESMACEAE						
....SCENEDESMUS	--	-	52#	80	26	5
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	13#	20	13	3
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....COSCINODISCUS	--	-	--	-	13	3
....CYCLOTELLA	13	3	--	-	--	-
....MELOSIRA	--	-	--	-	--	-
..PENNALES						
...ACHNANTHACEAE						
....COCCONEIS	13	3	--	-	--	-
....RHOICOSPHENIA	--	-	--	-	13	3
...CYMBELLACEAE						
....CYMBELLA	--	-	--	-	--	-
...DIATOMACEAE						
....DIATOMA	--	-	--	-	--	-
...FRAGILARIACEAE						
....FRAGILARIA	13	3	--	-	--	-
...NAVICULACEAE						
....NAVICULA	--	-	--	-	--	-
...NITZSCHIACEAE						
....NITZSCHIA	13	3	--	-	26	5
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOCHRYSIDACEAE						
....CHROOMONAS	--	-	--	-	13	3
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	13	3	--	-	--	-
..HORMOGONALES						
...OSCILLATORIACEAE						
....OSCILLATORIA	340#	81	--	-	230#	47
....PHORMIDIUM	--	-	--	-	150#	32
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)						
.DINOPHYCEAE						
..PERIDINIALES						
...GLENODINIACEAE						
....GLENODINIUM	13	3	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08158000 COLORADO RIVER AT AUSTIN, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	6780	539	294	5380	48	872	34	626	210
NOV.	1979	2182	579	315	1860	52	306	37	219	230
DEC.	1979	3849	570	310	3230	51	530	37	380	220
JAN.	1980	9275	544	296	7420	48	1210	35	866	210
FEB.	1980	2448	544	297	1960	48	318	35	229	210
MAR.	1980	12327	521	284	9470	46	1520	33	1090	200
APR.	1980	44284	488	267	31900	42	5030	30	3640	190
MAY	1980	60250	478	261	42500	41	6680	30	4840	190
JUNE	1980	75650	491	268	54800	42	8650	31	6260	190
JULY	1980	63030	494	270	45900	43	7260	31	5250	190
AUG.	1980	68092	487	266	49000	42	7710	30	5580	190
SEPT	1980	56950	498	272	41800	43	6630	31	4790	200
TOTAL		405117	**	**	295000	**	46700	**	33800	**
WTD. AVG.		1107	494	270	**	43	**	31	**	190

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	510	583	553	593	523	500	500	495	443	495	485	495
2	521	570	413	451	504	583	501	499	493	492	487	493
3	530	580	570	604	549	442	490	490	504	490	482	473
4	507	590	609	609	551	562	504	493	496	493	466	504
5	490	597	611	620	502	545	503	507	491	494	486	500
6	463	598	629	492	549	562	502	326	496	495	484	458
7	538	602	625	553	520	528	465	429	500	493	492	465
8	566	599	603	613	504	550	490	480	496	497	458	469
9	555	601	496	624	544	596	502	505	497	497	477	485
10	568	602	540	524	534	517	486	483	494	499	504	496
11	557	610	573	560	559	482	498	495	496	491	491	501
12	512	605	590	576	553	582	500	483	497	479	453	489
13	582	475	603	559	540	522	488	448	491	492	486	486
14	453	500	609	626	541	548	489	445	488	493	488	490
15	550	535	602	610	526	527	491	456	490	496	486	501
16	593	546	575	602	546	543	499	477	488	495	471	499
17	579	579	550	632	511	535	485	486	505	494	488	502
18	577	518	527	624	545	552	492	484	481	490	486	491
19	537	581	507	533	553	546	494	459	492	494	491	495
20	574	506	497	597	589	534	496	489	487	496	478	494
21	586	561	560	615	518	537	491	491	489	492	488	507
22	580	591	582	619	580	535	488	490	487	509	489	521
23	592	597	576	608	592	519	492	491	490	491	497	524
24	598	604	592	610	591	527	491	490	488	500	491	534
25	596	567	505	590	604	524	438	486	490	491	502	526
26	601	611	596	614	505	522	491	490	495	507	500	470
27	600	610	577	605	546	513	485	488	490	495	497	537
28	620	606	590	596	530	546	490	484	485	493	492	540
29	643	584	555	506	577	486	492	490	489	485	495	527
30	598	591	596	481	---	495	487	493	487	492	502	526
31	587	---	518	515	---	499	---	495	---	490	495	---
MEAN	560	577	565	579	544	531	491	478	491	494	487	500

08158000 COLORADO RIVER AT AUSTIN, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.5	20.5	14.5	14.0	10.5	15.5	16.5	---	20.5	20.5	21.5	23.0
2	22.0	19.5	15.0	14.0	10.5	15.5	17.0	18.0	20.5	20.5	22.0	23.0
3	22.0	19.5	14.5	14.5	11.0	14.0	17.0	18.0	20.5	20.5	21.5	23.5
4	21.5	19.5	14.5	14.0	11.0	14.0	17.0	18.5	21.0	20.5	22.0	23.0
5	21.5	19.5	14.0	14.0	13.5	15.0	18.0	18.0	21.0	20.0	22.0	23.5
6	21.5	20.5	14.5	14.0	13.5	14.0	17.0	18.5	20.5	20.5	23.0	24.0
7	22.0	19.0	14.0	14.0	12.0	15.0	18.0	18.0	21.0	20.5	22.0	23.5
8	22.0	19.0	14.0	14.0	13.0	15.5	---	18.0	22.0	20.0	22.0	23.5
9	23.0	19.0	14.5	13.5	11.5	15.5	18.0	18.5	20.5	20.0	23.0	23.5
10	21.5	19.0	14.0	14.0	11.0	16.0	18.0	18.5	22.0	20.5	23.5	24.0
11	21.5	18.0	14.0	14.5	11.5	16.5	18.0	18.0	20.5	20.5	23.5	23.5
12	21.5	18.0	14.0	14.0	12.0	16.5	18.0	18.5	22.0	21.0	23.0	23.5
13	21.5	18.0	14.5	14.0	11.5	17.0	17.0	20.5	21.0	20.5	23.0	23.5
14	22.0	17.0	14.5	14.5	12.0	17.0	16.5	20.0	21.0	20.5	23.0	23.5
15	22.0	17.0	15.0	14.5	---	16.0	---	20.0	21.5	21.0	23.0	24.0
16	22.0	17.0	13.5	15.5	14.5	16.5	19.0	19.5	16.5	21.0	23.0	24.0
17	22.0	17.0	13.0	14.0	12.0	16.5	16.0	20.5	20.0	21.0	23.0	24.5
18	21.5	17.0	13.0	---	12.0	15.5	16.5	20.5	20.0	22.0	23.0	23.5
19	23.0	18.0	12.0	15.5	13.0	15.5	16.5	21.0	20.5	22.0	22.0	24.5
20	23.0	18.5	13.5	16.0	14.0	16.5	16.5	21.0	20.5	21.0	22.0	24.5
21	23.0	19.0	14.0	16.0	15.5	16.0	16.5	21.0	---	21.0	23.0	24.5
22	23.5	18.0	14.0	16.0	15.5	15.5	16.5	21.5	20.5	---	23.0	24.5
23	21.5	17.0	14.5	15.0	16.5	16.5	16.5	21.0	20.0	23.0	23.0	24.5
24	21.0	17.0	14.0	14.5	16.5	15.5	17.0	23.5	20.0	23.0	23.0	25.0
25	21.0	16.5	14.0	14.5	16.5	16.0	17.0	23.5	20.5	21.0	23.5	24.5
26	21.0	17.0	14.5	14.5	16.5	15.5	18.0	23.5	20.5	21.0	22.0	24.5
27	21.0	17.0	14.5	14.5	15.5	16.0	---	20.5	23.0	21.0	23.5	24.5
28	21.0	17.0	14.5	13.5	16.0	16.0	17.0	20.5	20.5	22.0	23.0	---
29	21.5	16.0	14.5	11.5	17.0	16.5	18.0	20.5	20.0	---	22.0	24.0
30	21.5	15.0	14.5	11.0	---	16.5	17.0	19.5	20.0	22.0	22.0	24.5
31	20.5	---	14.5	11.0	---	16.5	---	20.5	---	22.0	22.0	---
MEAN	22.0	18.0	14.0	14.0	13.5	16.0	17.0	20.0	20.5	21.0	22.5	24.0

08158050 BOGGY CREEK AT U.S. HIGHWAY 183, AUSTIN, TX

LOCATION.--Lat 30°15'47", long 97°40'20", Travis County, Hydrologic Unit 12090205, on U.S. Highway 183, 1.6 mi (2.6 km) south of the intersection of Webberville Road and U.S. Highway 183, and 4.1 mi (6.6 km) east of the State Capitol Building in Austin.

DRAINAGE AREA.--13.1 mi^2 (33.9 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January to July 1975 (periodic discharge measurements only), August 1975 to June 1977 (operated as a flood-hydrograph partial-record station only), June 1977 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 411.29 ft (125.361 m) National Geodetic Vertical Datum of 1929 (levels from city of Austin bench mark).

REMARKS.-- Water-discharge records fair. No known regulation or diversions. There is a recording rain gage in the watershed above station. The station is part of a hydrologic research project to study the rainfall-runoff relationship for the Austin urban area.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,100 ft^3/s (173 m^3/s) May 23, 1975, gage height, 17.03 ft (5.191 m), from floodmark, from rating curve extended above 500 ft^3/s (14.2 m^3/s) on basis of slope-area measurement of peak flow; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,040 ft^3/s (29.5 m^3/s) Mar. 27 at 0815 hours, gage height, 9.37 ft (2.856 m), no peak above base of 1,500 ft^3/s (42.5 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.01	.04	.82	.26	3.4	.62	13	.65	.05	.11	.00
2	.00	.01	.04	.80	.69	.34	1.5	.54	.45	.06	.03	.00
3	.00	.00	.04	.73	.40	.31	.98	.32	.43	.10	.02	.00
4	.00	.01	.04	.60	.25	.31	.52	.27	.65	.10	.00	.00
5	.00	.12	.04	.57	.23	.29	.44	.25	.58	.06	.00	.00
6	.00	.02	.04	.55	.23	.29	.43	.25	.67	.06	.04	24
7	.00	.00	.04	.50	9.8	.37	.43	28	.80	.06	.36	20
8	.00	.00	.04	.47	15	.35	.41	36	.88	.04	.05	1.3
9	.00	.00	.04	.47	61	.35	.37	1.0	.47	.04	.13	2.8
10	.00	.00	.04	.70	3.5	.44	.37	.60	.27	.05	8.2	.14
11	.00	.00	.04	1.0	2.3	.51	.37	.55	.46	.06	.15	.06
12	.00	.00	25	.90	1.8	1.0	1.8	55	.44	.07	.05	.05
13	.00	.00	2.7	.52	1.2	.49	5.6	59	.48	.07	.04	.04
14	.00	.00	.13	.47	1.1	.40	.69	6.0	.41	.05	.03	.04
15	.00	.00	.06	.47	.98	.40	.43	11	.43	.00	.03	.04
16	.00	.00	.05	.47	22	2.1	.42	4.5	.32	.04	.11	.00
17	.00	.00	.04	.68	2.3	1.7	.37	1.5	.17	.03	.08	.00
18	.00	.00	.04	.84	1.9	.56	.37	1.1	.27	.05	.05	.00
19	.00	.00	.03	.55	1.6	.55	.37	2.2	.36	.05	.00	.34
20	.00	.00	.03	2.7	.94	.63	.37	.84	.27	.02	.00	.00
21	.00	1.3	.03	2.5	.85	.70	.37	1.1	2.0	.00	.00	.00
22	.00	.06	.03	21	.56	.70	.37	.68	.18	.00	.00	.00
23	.00	.04	50	1.6	.49	.75	.37	.64	.12	.00	.00	.00
24	.00	.37	.55	.52	.65	.75	.37	.56	.09	.00	.03	.00
25	.00	.93	.06	.54	.73	4.1	54	.52	.08	.00	.00	27
26	.00	.06	.05	.35	.32	1.6	.65	.49	.11	.01	.00	54
27	.00	.04	.04	.27	.31	207	.33	.45	.12	.02	.00	.56
28	.00	.04	74	.23	.31	3.0	.26	.35	.10	1.0	.00	2.4
29	.00	.04	12	.35	.32	2.1	.25	.30	.09	.10	.00	.11
30	20	.04	1.6	.64	---	.92	.25	.36	.06	.08	.00	1.3
31	.15	---	.97	.30	---	.75	---	.40	---	.21	.00	---
TOTAL	20.15	3.09	167.85	43.11	132.02	237.16	74.08	227.77	12.41	2.48	9.51	134.18
MEAN	.65	.10	5.41	1.39	4.55	7.65	2.47	7.35	.41	.080	.31	4.47
MAX	20	1.3	74	21	61	207	54	59	2.0	1.0	8.2	54
MIN	.00	.00	.03	.23	.23	.29	.25	.25	.06	.00	.00	.00
CFSM	.05	.008	.41	.11	.35	.58	.19	.56	.03	.006	.02	.34
IN.	.06	.01	.48	.12	.37	.67	.21	.65	.04	.01	.03	.38
AC-FT	40	6.1	333	86	262	470	147	452	25	4.9	19	266
(††)	.52	.54	3.58	.89	2.42	3.35	2.14	5.80	.30	.28	1.15	6.07

CAL YR 1979 TOTAL 5026.15 MEAN 13.8 MAX 956 MIN .00 CFSM 1.05 IN 14.27 AC-FT 9970 †† 39.41
WTR YR 1980 TOTAL 1063.81 MEAN 2.91 MAX 207 MIN .00 CFSM .22 IN 3.02 AC-FT 2110 †† 27.04

†† Rainfall on watershed, in inches, based on one rain gage.

08158050 BOGGY CREEK AT U.S. HIGHWAY 183, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1975 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
JAN 15...	0950	.45	707	8.0	15.0	5	1.2	9.2	92	.6

DATE	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
JAN 15...	170	64	57	270	34	89	12	38	1.0

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)
JAN 15...	2.7	290	0	58	50	.3	11	404	0

DATE	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
JAN 15...	0	.19	.000	.19	.000	.15	.15	.010	5.4

DATE	TIME	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
JAN 15...	0950	1	100	<1	0	1	<10

DATE	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
JAN 15...	0	6	.0	0	0	<3

DATE	TIME	GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L)	URANIUM DISSOLVED, EXTRACTION (UG/L)
JAN 15...	0950	<5.2	<.3	<7.6	<.4	4.1	<.4	3.8	<.4	.08	2.3

08158050 BOGGY CREEK AT U.S. HIGHWAY 183, AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	PCB TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
JAN									
15...	0950	.00	.0	.00	.0	.01	.00	.00	.00

DATE	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)
JAN									
15...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN									
15...	.00	.00	.00	.00	0	.00	.00	.00	.00

08158200 WALNUT CREEK AT DESSAU ROAD, AUSTIN, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 30°22'30", long 97°39'37", Travis County, Hydrologic Unit 12090205, on downstream side of bridge on Dessau Road and 8.4 mi (13.5 km) northeast of the State Capitol Building in Austin.

DRAINAGE AREA.--26.2 mi² (67.9 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1975 to current year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,150 ft³/s (60.9 m³/s) May 8, gage height, 11.23 ft (3.423 m).

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
OCT 29...	1210	.36	726	7.6	21.0	10	2.3	2.6	29	1.0
JAN 14...	1215	.83	695	8.3	11.0	5	.50	15.2	141	.7

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
OCT 29...	1600	57	740	--	--	--	--	--	--
JAN 14...	420	120	39	260	50	98	4.6	37	1.0

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)
OCT 29...	--	--	--	--	--	--	--	--	12
JAN 14...	2.2	260	0	54	56	.3	2.4	383	0

DATE	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 29...	7	.13	.010	.14	.020	.55	.57	.020	16
JAN 14...	0	1.7	.010	1.7	.000	.27	.27	.020	4.8

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
JAN 14...	1215	0	80	<1	0	0	<10

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN 14...	0	1	.1	0	0	<3

08158200 WALNUT CREEK AT DESSAU ROAD, AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L)
JAN 14...	1215	5.7	<.3	8.4	<.4	3.4	<.4	3.5	<.4	.07	1.2

DATE	TIME	PCB TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JAN 14...	1215	.00	.0	.00	.0	.00	.00	.00	.00

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JAN 14...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 14...	.00	.00	.00	.00	0	.00	.00	.00	.00

08158600 WALNUT CREEK AT WEBBERVILLE ROAD, AUSTIN, TX

LOCATION.--Lat 30°16'59", long 97°39'17", Travis County, Hydrologic Unit 12090205, on left bank 190 ft (58 m) downstream from bridge on Farm Road 969, 0.8 mi (1.3 km) downstream from Little Walnut Creek, 2.8 mi (4.5 km) upstream from Colorado River, and 5.2 mi (8.4 km) east of the State Capitol Building in Austin.

DRAINAGE AREA.--51.3 mi² (132.9 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 425.96 ft (129.833 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. No known regulation or diversion. Station is part of hydrologic research project to study rainfall-runoff relation for urban areas. Five recording rain gages are located in the watershed above this station.

AVERAGE DISCHARGE.--14 years, 22.4 ft³/s (0.634 m³/s), 5.93 in/yr (151 mm/yr), 16,230 acre-ft/yr (20.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,500 ft³/s (297 m³/s) Nov. 23, 1974, gage height, 26.16 ft (7.974 m); no flow at times in 1967 and 1971.

Maximum stage since at least 1891, that of Nov. 23, 1974. Flood of Oct. 11, 1973, reached a stage of 25.56 ft (7.791 m), discharge 10,000 ft³/s (283 m³/s).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 15, 1935, reached a stage of 24 ft (7.3 m), backwater from Colorado River. A flood in 1919 reached a stage of 22 ft (6.7 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42.5 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 27	1430	2,000	56.6	12.80	3.901	May 12	1400	2,220	62.9	13.33	4.063
May 8	1400	1,940	54.9	12.64	3.853	Sept. 25	1945	*3,400	96.3	15.92	4.852

Minimum daily discharge, 0.02 ft³/s (0.001 m³/s) Aug. 28 to Sept. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	1.4	1.5	5.5	9.9	8.4	23	89	14	1.4	.15	.02
2	1.2	1.3	1.5	5.1	11	4.8	30	15	14	1.4	.15	.02
3	1.2	1.2	1.5	4.8	11	5.1	21	11	13	1.4	.15	.03
4	1.2	1.2	1.5	4.4	10	5.7	17	9.4	13	1.4	1.4	.04
5	1.0	1.2	1.5	4.7	10	5.7	15	8.2	12	1.3	.15	.05
6	1.0	1.2	1.7	4.7	9.4	5.7	14	7.1	11	1.1	.67	26
7	1.0	1.2	1.7	3.8	21	5.7	13	80	11	1.1	8.5	40
8	1.0	1.2	1.7	3.8	39	5.4	11	365	9.5	1.1	3.5	8.4
9	1.0	1.2	1.7	3.8	93	5.4	10	46	20	1.1	.81	18
10	.93	1.2	1.7	3.9	17	5.4	16	27	12	1.1	5.4	3.4
11	.93	1.4	1.7	4.2	12	5.4	9.6	22	9.7	1.1	3.8	1.8
12	.93	1.4	22	3.8	10	6.9	17	407	8.5	.81	1.4	1.2
13	1.2	1.4	11	3.8	9.2	5.9	51	310	7.4	.60	.81	.61
14	.93	1.5	3.8	3.8	8.5	5.4	14	161	6.4	.60	.81	.97
15	.93	1.4	3.0	3.8	6.1	4.9	11	311	6.3	.60	.81	.65
16	.93	1.4	2.9	3.8	45	8.3	9.4	222	5.4	.60	2.0	1.2
17	.93	1.4	2.5	9.4	12	7.3	8.3	85	4.8	.32	2.4	.69
18	.93	2.0	2.5	5.9	9.9	5.1	7.9	59	4.3	.32	1.2	.60
19	.93	1.7	2.5	4.5	8.6	4.7	7.5	65	3.7	.32	.59	15
20	.93	1.7	2.5	6.9	7.7	4.7	7.1	46	3.4	.32	.83	1.5
21	.93	4.5	2.5	7.6	7.0	4.4	6.7	40	28	.15	.79	.62
22	.93	2.1	4.2	40	6.4	4.1	6.1	33	6.4	.15	.60	.17
23	.93	1.7	64	11	5.9	4.1	6.4	30	4.1	.15	.73	.08
24	.93	1.7	11	9.1	5.6	4.1	6.1	26	3.1	.32	.60	.07
25	.93	4.0	5.1	8.2	5.3	8.8	170	24	2.7	.32	1.6	395
26	.93	1.7	4.2	7.0	5.1	5.2	18	23	2.2	.32	.66	228
27	.93	1.5	3.0	6.7	4.7	673	11	20	2.0	1.1	.10	23
28	.93	1.4	69	6.4	5.1	78	8.7	19	1.7	4.1	.02	29
29	.93	1.3	47	6.7	6.8	47	8.1	17	1.3	2.5	.02	10
30	32	1.5	9.6	7.2	---	33	6.8	16	1.4	.60	.02	26
31	3.0	---	7.7	7.5	---	26	---	15	---	.15	.02	---
TOTAL	63.77	49.0	297.7	211.8	412.2	1003.6	560.7	2608.7	242.3	27.85	40.69	832.12
MEAN	2.06	1.63	9.60	6.83	14.2	32.4	18.7	84.2	8.08	.90	1.31	27.7
MAX	32	4.5	69	40	93	673	170	407	28	4.1	8.5	395
MIN	.93	1.2	1.5	3.8	4.7	4.1	6.1	7.1	1.3	.15	.02	.02
CFSM	.04	.03	.19	.13	.28	.63	.37	1.64	.16	.02	.03	.54
IN.	.05	.04	.22	.15	.30	.73	.41	1.89	.18	.02	.03	.60
AC-FT	126	97	590	420	818	1990	1110	5170	481	55	81	1650
(††)	.76	.65	3.60	1.44	2.35	3.78	3.20	7.43	.94	.20	.87	7.89

CAL YR 1979 TOTAL 9898.67 MEAN 27.1 MAX 1720 MIN .93 CFSM .53 IN 7.18 AC-FT 19630 †† 34.83
WTR YR 1980 TOTAL 6350.43 MEAN 17.4 MAX 673 MIN .02 CFSM .34 IN 4.60 AC-FT 12600 †† 33.11

†† Weighted-mean rainfall on watershed, in inches, based on five rain gages.

08158600 WALNUT CREEK AT WEBBERVILLE ROAD, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1975 to current year. Sediment records: October 1977 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
OCT 29...	1310	.93	609	8.0	21.5	5	.20	8.5	97	.6
JAN 15...	0825	3.8	645	7.9	13.0	5	.60	8.4	81	.6
APR 15...	0825	11	--	--	12.0	--	--	--	--	--

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
OCT 29...	4500	89	190	--	--	--	--	--	--	--
JAN 15...	320	96	45	250	67	88	6.8	29	.8	2.6
APR 15...	--	--	--	--	--	--	--	--	--	--

DATE	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)
OCT 29...	--	--	--	--	--	--	--	0	0	.01
JAN 15...	220	0	72	48	.3	2.9	358	12	7	.37
APR 15...	--	--	--	--	--	--	--	--	--	--

DATE	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)
OCT 29...	.000	.01	.000	.50	.50	.040	5.4	--	--
JAN 15...	.010	.38	.000	.16	.16	.000	4.4	65	.67
APR 15...	--	--	--	--	--	--	--	75	2.2

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
JAN 15...	0825	0	80	<1	0	1	<10

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN 15...	0	<1	.1	0	0	<3

08158600 WALNUT CREEK AT WEBBERVILLE ROAD, AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L)
JAN 15...	0825	5.0	<.3	7.3	<.4	<2.8	<.4	<2.7	<.4	.15	1.8

DATE	TIME	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JAN 15...	0825	.0	.00	.00	.0	.00	.00	.00	.00

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JAN 15...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 15...	.00	.00	.00	.00	0	.00	.00	.00	.00

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, WATER (DEG C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)
JAN 15...	0825	3.8	13.0	65	.67
APR 15...	0825	11	12.0	75	2.2

08158640 WALNUT CREEK AT SOUTHERN PACIFIC RAILROAD BRIDGE, AUSTIN, TX
(Reconnaissance partial-record station)

LOCATION.--Lat 30°15'58", long 97°39'24", Travis County, Hydrologic Unit 12090205, at Southern Pacific Railroad bridge, 1.2 mi (1.9 km) south of Webberville Road, and 5.0 mi (8.0 km) east of the State Capitol in Austin.

DRAINAGE AREA.--53.5 mi² (138.6 km²).

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1975 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
OCT										
29...	1335	26	718	7.0	27.5	15	2.2	4.6	59	8.1
JAN										
15...	0900	28	910	7.0	20.0	15	4.2	4.7	52	15

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
OCT									
29...	17000	400	150	--	--	--	--	--	--
JAN									
15...	920	88	29	160	32	39	16	93	3.2

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)
OCT									
29...	--	--	--	--	--	--	--	--	1
JAN									
15...	10	160	0	100	89	2.9	12	441	2

DATE	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT									
29...	1	5.1	.000	5.1	2.700	16	19	9.100	9.6
JAN									
15...	2	5.5	4.000	9.5	6.200	8.8	15	8.600	9.9

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
JAN							
15...	0900	1	20	<1	0	50	50

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN						
15...	0	20	.1	0	0	20

08158640 WALNUT CREEK AT SOUTHERN PACIFIC RAILROAD BRIDGE, AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L)
JAN 15...	0900	<4.8	<.3	<7.1	<.4	7.3	<.4	6.9	<.4	.02	.17

DATE	TIME	PCB TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JAN 15...	0900	.00	.0	.00	.0	.00	.00	.00	.64

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JAN 15...	.01	.00	.00	.00	.00	.00	.05	.05	.00

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 15...	.00	.00	.00	.00	0	.00	.09	.00	.00

08158650 COLORADO RIVER BELOW AUSTIN, TX
(Low-flow partial-record station)

LOCATION.--Lat 30°12'28", long 97°38'15", Travis County, Hydrologic Unit 12090205, at bridge on Farm Road 973, 0.3 mi (0.5 km) northeast of intersection of State Highway 71 and Farm Road 973, 8.8 mi (14.2 km) downstream from Govalle Sewage Treatment Plant outfall, and 9.6 mi (15.4 km) downstream from gaging station at Austin.

PERIOD OF RECORD.--Periodic chemical and biochemical analyses: February 1968 to current year. Pesticide analyses: October 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 24...	1250	622	7.3	21.0	5	1.5	8.7	98	1.7	160	K6	K5
NOV 05...	1255	650	7.1	19.0	10	.50	6.0	65	1.8	84	K10	K18
DEC 10...	1340	688	7.0	14.0	5	1.7	4.5	44	8.2	1800	K6	310
JAN 07...	1310	651	6.9	12.0	5	.90	7.1	66	8.9	1100	K19	20
FEB 04...	1425	648	6.9	12.0	10	2.1	7.9	74	8.0	3900	62	400
MAR 03...	1255	652	7.3	12.0	10	2.6	12.2	114	3.7	3400	K8	24
APR 07...	1035	542	7.5	20.5	0	1.8	8.4	95	3.2	700	K40	21
MAY 12...	1140	508	7.3	20.0	0	4.7	8.4	93	1.1	1700	88	140
JUN 09...	1310	495	7.4	23.5	5	12	7.4	87	.9	230	31	24
JUL 07...	1210	510	7.6	23.0	0	3.8	8.6	100	1.1	11000	800	K16
AUG 11...	1315	525	7.3	27.0	0	5.3	6.4	81	2.5	2500	820	85
SEP 08...	1320	471	7.5	25.0	5	3.3	8.6	105	1.0	4700	1100	120

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT 24...	210	42	51	19	39	1.2	5.6	200	0	52	55	.7
NOV 05...	--	--	--	--	--	--	--	200	0	--	--	--
DEC 10...	230	45	59	21	46	1.3	5.3	230	0	52	58	.8
JAN 07...	210	40	57	17	39	1.2	5.9	210	0	55	58	1.0
FEB 04...	200	37	49	19	51	1.6	6.5	200	0	56	62	1.1
MAR 03...	--	--	--	--	--	--	--	200	0	--	--	--
APR 07...	--	--	--	--	--	--	--	200	0	--	--	--
MAY 12...	--	--	--	--	--	--	--	190	0	--	--	--
JUN 09...	190	39	45	20	25	.8	3.5	190	0	31	43	.3
JUL 07...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 11...	180	34	43	18	30	1.0	4.0	180	0	34	46	.5
SEP 08...	--	--	--	--	--	--	--	--	--	--	--	--

08158650 COLORADO RIVER BELOW AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 24...	8.2	329	0	0	3.3	.66	4.0	.32	.98	1.3	1.700	6.9
NOV 05...	--	--	6	0	3.9	.60	4.5	1.4	.90	2.3	2.400	8.6
DEC 10...	11	366	2	1	.63	.27	.90	.89	2.7	3.6	3.800	7.0
JAN 07...	8.7	345	15	15	1.8	.22	2.0	1.7	1.8	3.5	2.300	7.2
FEB 04...	11	354	10	9	.56	.23	.79	1.7	9.3	11	2.300	7.2
MAR 03...	--	--	0	0	.93	.17	1.1	1.7	2.4	4.1	2.600	7.5
APR 07...	--	--	2	1	.58	.23	.81	.70	1.4	2.1	.530	5.8
MAY 12...	--	--	11	1	.17	.03	.20	.20	.48	.68	.290	5.4
JUN 09...	8.0	270	37	8	.24	.01	.25	.06	.46	.52	.190	3.9
JUL 07...	--	--	18	2	.28	.05	.33	.15	.61	.76	.130	3.1
AUG 11...	9.1	273	74	71	1.0	.20	1.2	.75	.35	1.1	1.700	6.7
SEP 08...	--	--	13	13	.40	.07	.47	.13	.61	.74	.280	14

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT 24...	1250	2	50	<1	0	2	<10
FEB 04...	1425	2	60	2	0	2	20
JUN 09...	1310	1	60	<1	0	1	<10
AUG 11...	1315	2	60	<1	0	1	10

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 24...	0	10	.2	0	0	5
FEB 04...	0	70	.1	0	0	10
JUN 09...	0	9	.3	0	0	<3
AUG 11...	0	20	.7	0	0	10

DATE	TIME	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
FEB 04...	1425	.0	.00	.00	.0	.00	.00	.00	.36
AUG 11...	1315	.0	.00	.00	.0	.00	.00	.00	.11

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
FEB 04...	.00	.00	.00	.00	.00	.00	.00	.02	.00
AUG 11...	.00	.00	--	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
FEB 04...	.00	.00	.00	.00	0	.00	.05	.00	.00
AUG 11...	.00	.00	.00	.00	0	.00	.13	.00	.00

08158700 ONION CREEK NEAR DRIFTWOOD, TX

LOCATION.--Lat 30°04'59", long 98°00'29", Hays County, Hydrologic Unit 12090205, on left bank at upstream side of low-water crossing on Farm Road 150, 3.2 mi (5.1 km) southeast of Driftwood, and 10 mi (16 km) west of Buda.

DRAINAGE AREA.--124 mi² (321 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1958, November 1961 to June 1979 (periodic discharge measurements only), July 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 878.13 ft (267.654 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. Station is part of a hydrologic research project to study rainfall-runoff relationship in the Austin urban-rural areas. There is a digital recording rain gage located in the watershed.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,900 ft³/s (53.8 m³/s) July 27, 1979, gage height, 7.15 ft (2.179 m); minimum daily, 0.27 ft³/s (0.008 m³/s) Sept. 5, 1980.

Flood of Mar. 20, 1979, reached a stage of 11.48 ft (3.499 m), discharge, 4,980 ft³/s (141 m³/s), on basis of peak flow over dam, 1.5 mi (2.4 km) downstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--Since 1938, the highest flood peaked at a depth of 18 to 20 ft (5.5 to 6.1 m) over dam 1.5 mi (2.4 km) downstream in 1940 or 1941, and the second highest flood peaked at a depth of 10 to 12 ft (3.0 to 3.7 m) over dam in 1976, according to local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 622 ft³/s (17.6 m³/s) May 21 at 1130 hours, gage height, 5.88 ft (1.792 m), no other peak above base of 500 ft³/s (14.2 m³/s); minimum daily, 0.27 ft³/s (0.008 m³/s) Sept. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	1.4	1.3	1.6	2.2	2.7	7.7	11	91	7.5	.75	.35
2	2.7	1.1	1.3	1.6	2.2	2.7	8.2	11	72	6.1	.75	.35
3	2.7	1.1	1.3	1.6	2.2	2.7	8.3	11	69	5.6	.92	.30
4	2.2	1.1	1.3	1.6	2.2	2.7	8.3	11	61	4.8	1.1	.30
5	1.8	1.1	1.3	1.6	2.2	2.7	8.3	11	53	4.3	1.1	.27
6	1.8	1.1	1.3	1.6	2.2	2.7	8.3	11	44	3.8	1.0	.45
7	2.0	1.1	1.6	1.6	2.3	2.7	8.1	11	42	2.7	.98	9.0
8	2.3	1.2	1.3	1.6	2.7	2.7	7.7	12	39	3.2	1.1	29
9	3.1	1.3	1.3	1.6	3.1	2.7	6.5	13	37	2.2	1.1	16
10	1.6	1.3	1.3	1.6	3.2	2.7	6.5	13	35	2.2	1.8	10
11	2.2	1.3	1.3	1.6	3.2	2.7	6.5	13	32	2.2	2.5	8.6
12	2.9	1.3	2.4	1.6	3.2	3.4	6.5	91	29	2.7	1.5	7.5
13	4.1	1.3	3.7	1.6	3.2	3.3	32	88	28	2.2	1.3	5.2
14	3.9	1.3	1.7	1.6	3.2	3.2	10	225	26	2.7	1.2	4.8
15	3.2	1.3	1.6	1.6	3.2	3.2	10	115	26	2.7	1.1	4.3
16	3.2	1.5	1.6	1.6	4.4	3.2	10	101	26	1.5	1.3	3.8
17	3.8	1.6	1.6	2.2	3.2	3.2	10	87	24	1.3	.92	2.7
18	3.8	2.2	1.6	2.6	3.2	3.2	9.0	77	23	1.1	.97	2.2
19	3.8	2.4	1.6	2.2	2.7	3.2	9.0	82	23	1.1	1.1	41
20	3.8	2.7	1.6	2.2	2.7	3.2	9.0	74	22	1.1	1.0	15
21	3.8	2.7	1.6	3.0	2.7	2.8	9.0	255	21	1.1	.92	8.6
22	3.5	2.7	1.6	3.2	2.7	2.7	9.4	145	20	1.3	.92	7.0
23	2.2	2.7	1.8	3.2	2.7	3.0	9.8	124	18	1.3	.80	5.6
24	2.2	2.3	2.2	2.9	2.7	2.8	9.8	114	17	.96	.67	5.2
25	2.2	3.2	2.1	2.7	2.7	2.7	13	107	15	.92	.55	5.2
26	2.2	2.6	1.8	2.7	2.7	2.7	14	101	14	.92	.50	4.3
27	2.2	2.2	1.8	2.4	2.7	7.0	13	97	12	.90	.47	6.5
28	2.2	1.5	2.6	2.2	2.7	8.3	12	90	10	.75	.43	9.8
29	2.2	1.3	4.0	2.2	2.7	7.5	11	83	9.0	.75	.40	14
30	3.8	1.3	1.8	2.2	---	7.0	11	72	7.9	.75	.38	116
31	2.9	---	1.8	2.2	---	7.0	---	94	---	.75	.35	---
TOTAL	87.0	51.2	55.1	63.7	81.0	112.3	301.9	2350	945.9	71.40	29.88	343.32
MEAN	2.81	1.71	1.78	2.05	2.79	3.62	10.1	75.8	31.5	2.30	.96	11.4
MAX	4.1	3.2	4.0	3.2	4.4	8.3	32	255	91	7.5	2.5	116
MIN	1.6	1.1	1.3	1.6	2.2	2.7	6.5	11	7.9	.75	.35	.27
CFSM	.02	.01	.01	.02	.02	.03	.08	.61	.25	.02	.008	.09
IN.	.03	.02	.02	.02	.02	.03	.09	.70	.28	.02	.01	.10
AC-FT	173	102	109	126	161	223	599	4660	1880	142	59	681
(††)	.43	.44	.11	.86	1.98	3.22	3.25	6.15	.03	.30	1.20	7.79

CAL YR 1979 TOTAL - MEAN - MAX - MIN - CFSM - IN - AC-FT - †† -
WTR YR 1980 TOTAL 4492.70 MEAN 12.3 MAX 255 MIN .27 CFSM .10 IN 1.35 AC-FT 8910 †† 25.76

†† Rainfall on watershed, in inches, based on one rain gage.

08158700 ONION CREEK NEAR DRIFTWOOD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1974 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
OCT 31...	0945	4.3	484	7.9	17.5	5	.40	7.4	79	1.5
JAN 15...	1410	.60	516	8.1	15.0	5	.80	9.6	96	.7
SEP 30...	1210	118	294	7.8	22.0	34	68	8.8	101	1.1

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
OCT 31...	1900	1200	340	--	--	--	--	--	--
JAN 15...	380	K6	K16	250	43	68	19	9.0	.2
SEP 30...	12000	4500	11000	150	15	43	9.5	3.7	.1

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)
OCT 31...	--	--	--	--	--	--	--	--	1
JAN 15...	1.1	250	0	48	16	.2	8.2	293	0
SEP 30...	1.6	160	0	15	13	.2	8.9	174	32

DATE	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 31...	0	.00	.000	.00	.020	.43	.45	.010	7.6
JAN 15...	0	.04	.000	.04	.000	.08	.08	.010	3.0
SEP 30...	18	.25	.000	.25	.000	.86	.86	.050	10

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
JAN 15...	1410	1	30	<1	0	0	<10
SEP 30...	1210	1	20	<1	0	<10	40

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN 15...	0	<1	.0	0	0	<3
SEP 30...	<10	1	.0	0	0	<3

08158700 ONION CREEK NEAR DRIFTWOOD, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	GROSS ALPHA, DIS- SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L)
JAN											
15...	1410	<3.7	<.3	<5.5	<.4	<2.3	<.4	<2.2	<.4	.05	.60

DATE	TIME	PCB TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
JAN									
15...	1410	.00	.0	.00	.0	.00	.00	.00	.00
SEP									
30...	1210	.00	.0	.00	.0	.00	.00	.00	.00

DATE	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)
JAN									
15...	.00	.00	.00	.00	.00	.00	.00	.00	.00
SEP									
30...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN									
15...	.00	.00	.00	.00	0	.00	.00	.00	.00
SEP									
30...	.00	.00	.00	.00	0	.00	.00	.00	.00

08158800 ONION CREEK AT BUDA, TX

LOCATION.--Lat 30°05'09", long 97°50'52", Hays County, Hydrologic Unit 12090205, on left bank at downstream side of bridge on Farm Road 967 and 0.4 mi (0.6 km) northwest of Buda.

DRAINAGE AREA.--166 mi² (430 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.-- November 1961 to September 1973, January 1978 to July 1979 (periodic discharge measurements only), July 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 657.39 ft (200.372 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. The station is part of a hydrologic-research project to study rainfall-runoff relation for the Austin urban-rural areas. There are two recording rain gages located in the watershed above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,560 ft³/s (44.2 m³/s) May 21, 1980, gage height, 6.48 ft (1.975 m); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 28, 1929, reached a stage of about 36.2 ft (11.03 m), present datum, discharge, 53,200 ft³/s (1,510 m³/s), from slope-area indirect measurement of peak flow. This is probably the highest flood since that date.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,560 ft³/s (44.2 m³/s) May 21 at 0545 hours, gage height, 6.48 ft (1.975 m), no other peak above base of 1,000 ft³/s (28.3 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.03	.33	.69	.00	.58	1.3	.00	.58	.00	.00	.00
2	.00	.00	.42	.67	.00	.58	1.4	.00	.42	.00	.00	.00
3	.00	.00	.42	.62	.08	.58	1.4	.00	.25	.00	.00	.00
4	.00	.00	.42	.49	.08	.58	1.2	.00	.25	.00	.00	.00
5	.00	.00	.42	.42	.08	.58	1.1	.00	.17	.00	.00	.00
6	.00	.00	.50	.42	.08	.58	.83	.00	.17	.00	.00	.00
7	.00	.00	.50	.31	.17	.67	.70	.00	.17	.00	.00	.00
8	.00	.00	.50	.21	.50	.58	.60	.22	.08	.00	.00	.00
9	.00	.00	.50	.08	.58	.33	.50	.03	.00	.00	.00	.00
10	.00	.00	.50	.07	.58	.17	.40	.00	.00	.00	.00	.00
11	.00	.00	.42	.17	.58	.00	.30	.00	.00	.00	.00	.00
12	.00	.00	1.0	.17	.50	.50	.20	.43	.00	.00	.00	.00
13	.00	.00	1.0	.17	.58	.42	.20	18	.00	.00	.00	.00
14	.00	.00	.67	.17	.58	.00	.10	420	.00	.00	.00	.00
15	.00	.00	.58	.17	.58	.00	.10	127	.00	.00	.00	.00
16	.00	.00	.42	.08	.92	.00	.09	79	.00	.00	.00	.00
17	.00	.00	.42	.75	1.0	.00	.08	25	.00	.00	.00	.00
18	.00	.00	.42	.60	.92	.00	.07	4.8	.00	.00	.00	.00
19	.00	.00	.42	.29	.83	.00	.06	1.6	.00	.00	.00	.00
20	.02	.00	.50	.31	.83	.00	.05	1.3	.00	.00	.00	.00
21	.00	.42	.50	.25	.83	.00	.04	568	.00	.00	.00	.00
22	.00	.67	.50	.56	.83	.00	.05	167	.00	.00	.00	.00
23	.00	.58	.49	.41	.75	.00	.04	63	.00	.00	.00	.00
24	.00	.42	.62	.33	.75	.00	.11	23	.00	.00	.00	.00
25	.00	.42	.45	.29	.75	.00	.32	9.3	.00	.00	.00	.00
26	.00	.42	.39	.25	.67	.00	.20	4.5	.00	.00	.00	.00
27	.00	.33	.58	.16	.67	1.4	.10	2.1	.00	.00	.00	.00
28	.00	.25	.84	.08	.58	1.7	.05	1.3	.00	.00	.00	.00
29	.00	.08	1.3	.08	.58	1.6	.00	1.2	.00	.00	.00	.00
30	.03	.17	.97	.08	---	1.4	.00	.83	.00	.00	.00	.00
31	.06	---	.78	.00	---	1.3	---	.75	---	.00	.00	---
TOTAL	.11	3.79	17.78	9.35	15.88	13.55	11.59	1518.36	2.09	.00	.00	.00
MEAN	.004	.13	.57	.30	.55	.44	.39	49.0	.070	.000	.000	.000
MAX	.06	.67	1.3	.75	1.0	1.7	1.4	568	.58	.00	.00	.00
MIN	.00	.00	.33	.00	.00	.00	.00	.00	.00	.00	.00	.00
CFSM	.000	.001	.003	.002	.003	.003	.002	.30	.000	.000	.000	.000
IN.	.00	.00	.00	.00	.00	.00	.00	.34	.00	.00	.00	.00
AC-FT	.2	7.5	35	19	31	27	23	3010	4.1	.00	.00	.00
(††)	.64	.55	.75	.82	2.05	3.28	3.09	6.40	.15	.26	1.18	7.78

CAL YR 1979 TOTAL - MEAN - MAX - MIN - CFSM - IN - AC-FT - †† -
WTR YR 1980 TOTAL 1592.50 MEAN 4.35 MAX 568 MIN .00 CFSM .03 IN .36 AC-FT 3160 †† 26.95

†† Weighted-mean rainfall on watershed, in inches, based on two rain gages.

08158800 ONION CREEK AT BUDA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1978 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
OCT										
31...	0830	.17	455	7.8	17.0	5	3.2	7.4	78	1.5
JAN										
17...	1315	1.0	403	7.9	13.0	5	2.5	9.6	91	1.5
MAY										
14...	1320	447	331	8.1	22.0	30	28	7.9	92	1.5
28...	1330	1.3	378	7.7	31.5	--	--	--	--	--

DATE	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
OCT									
31...	1200	120	96	--	--	--	--	--	--
JAN									
17...	1000	260	1500	170	25	57	7.3	13	.4
MAY									
14...	21000	780	1100	160	12	48	9.7	4.8	.2
28...	200	K8	K7	170	21	51	10	6.3	.2

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)
OCT									
31...	--	--	--	--	--	--	--	--	23
JAN									
17...	3.0	180	0	35	15	.1	4.1	223	5
MAY									
14...	2.1	180	0	15	8.0	.2	8.6	185	59
28...	2.2	180	0	20	11	.2	6.6	196	--

DATE	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT									
31...	3	.46	.020	.48	.020	.50	.52	.010	7.4
JAN									
17...	0	.03	.010	.04	.000	.12	.12	.020	6.9
MAY									
14...	4	.17	.010	.18	.010	.50	.51	.040	6.2
28...	--	.01	.000	.01	.010	.49	.50	.010	--

DATE	TIME	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
JAN							
17...	1315	0	40	<1	0	3	<10
MAY							
14...	1320	1	20	<1	0	0	20
28...	1330	1	30	<1	0	0	10

08158800 ONION CREEK AT BUDA, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
JAN						
17...	0	<1	.0	0	0	<3
MAY						
14...	1	<1	.0	0	0	<3
28...	0	4	.0	0	0	<3

DATE	TIME	GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L)	URANIUM DISSOLVED, EXTRACTION (UG/L)
JAN											
17...	1315	<2.9	.5	<4.2	.8	3.4	.9	3.2	.9	.04	.60

DATE	TIME	PCB TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
JAN									
17...	1315	.00	.0	.00	.0	.00	.00	.00	.00

DATE	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)
JAN									
17...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN									
17...	.00	.00	.00	.00	0	.00	.00	.00	.00

08158810 BEAR CREEK BELOW FARM ROAD 1826 NEAR DRIFTWOOD, TX

LOCATION.--Lat 30°09'19", long 97°56'23", Hays County, Hydrologic Unit 12090205, 0.8 mi (1.3 km) southeast of Farm Road 1826 and 5.9 mi (9.5 km) northeast of Driftwood.

DRAINAGE AREA.--12.2 mi² (31.6 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1978 to July 1979 (periodic discharge measurements only), October 1978 to June 1979 (peak discharges above base only), July 1979 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 860 ft (262.1 m), from topographic map.

REMARKS.--Water-discharge records fair. Station is part of a hydrologic research project to study rainfall-runoff relation for the Austin urban-rural areas. There is a digital recording rain gage located in the watershed.

EXTREMES FOR PERIOD OF RECORD.--Maxumum discharge, 3,050 ft³/s (86.4 m³/s) Apr. 18, 1979, gage height, 9.24 ft (2.816 m) from floodmarks, from slope-area measurements of peak flow; no flow Aug. 28 to Sept. 5, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 9, 1939, reached a stage of 16.2 ft (4.938 m), discharge unknown, and was the highest since at least 1924, from information by local resident. A flood in 1915 was 2 ft (0.6 m) higher than the 1939 flood; from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 323 ft³/s (9.15 m³/s) May 21 at 0415 hours, gage height, 4.73 ft (1.442 m), no peak above base of 500 ft³/s (14.2 m³/s); no flow Aug. 28 to Sept. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.70	.40	.45	.45	.30	2.2	4.9	1.3	9.7	1.0	.15	.00
2	.63	.40	.45	.45	.33	1.3	4.9	1.3	9.7	.96	.13	.00
3	.70	.40	.45	.40	.33	1.0	4.3	1.3	9.7	.88	.10	.00
4	.51	.40	.45	.40	.33	1.0	3.9	1.3	9.1	.82	.09	.00
5	.45	.45	.45	.40	.33	1.0	3.5	1.2	8.5	.73	.08	.00
6	.57	.45	.45	.40	.33	1.0	3.3	1.1	8.0	.70	.07	.01
7	.70	.45	.45	.40	.34	.96	3.2	1.6	7.3	.69	.06	.20
8	.70	.45	.45	.40	.37	.91	2.9	11	6.8	.63	.05	.18
9	.80	.45	.45	.37	.82	.91	2.6	4.1	6.3	.61	.04	.27
10	.80	.45	.45	.37	.51	.91	2.7	3.1	6.1	.59	.13	.23
11	.80	.45	.45	.37	.57	.91	2.7	2.9	5.5	.57	.17	.17
12	.80	.40	.63	.37	.57	1.0	2.7	41	5.0	.49	.13	.16
13	.91	.40	1.0	.37	.57	1.0	2.7	73	4.6	.45	.10	.15
14	.91	.40	.72	.37	.57	1.0	2.4	51	4.0	.44	.09	.13
15	.91	.40	.63	.33	.57	1.0	2.3	43	3.7	.40	.09	.12
16	.91	.40	.57	.33	1.1	1.0	2.1	43	3.5	.39	.07	.12
17	.91	.40	.57	.37	.80	1.0	1.7	34	3.3	.33	.07	.11
18	1.0	.42	.57	.40	.80	.93	1.7	29	3.0	.30	.07	.11
19	1.0	.45	.57	.40	.80	.80	1.7	28	2.8	.32	.07	11
20	1.0	.45	.57	.38	.91	.80	1.7	23	2.5	.33	.05	.26
21	.91	.45	.57	.91	.91	.80	1.6	55	2.2	.28	.05	.20
22	.91	.45	.57	.80	.91	.80	1.8	18	2.1	.29	.05	.18
23	.91	.45	.61	.63	.91	.80	1.7	15	1.9	.30	.04	.18
24	.80	.45	.57	.53	.91	.80	1.6	14	1.7	.25	.04	.18
25	.70	.45	.51	.37	.91	.80	4.0	13	1.6	.25	.03	.26
26	.63	.45	.51	.33	.96	.82	1.7	12	1.5	.25	.02	.61
27	.57	.45	.51	.33	1.0	9.0	1.5	12	1.4	.22	.01	1.0
28	.51	.45	.86	.33	1.2	6.9	1.5	11	1.2	.21	.00	1.9
29	.45	.45	.70	.30	1.6	6.3	1.4	11	1.1	.20	.00	2.1
30	.40	.45	.59	.30	---	5.8	1.3	11	1.1	.19	.00	51
31	.37	---	.49	.30	---	5.2	---	9.9	---	.16	.00	---
TOTAL	22.87	12.97	17.27	12.86	20.56	58.65	76.0	577.1	134.9	14.23	2.05	70.83
MEAN	.74	.43	.56	.41	.71	1.89	2.53	18.6	4.50	.46	.066	2.36
MAX	1.0	.45	1.0	.91	1.6	9.0	4.9	73	9.7	1.0	.17	51
MIN	.37	.40	.45	.30	.30	.80	1.3	1.1	1.1	.16	.00	.00
CFSM	.06	.04	.05	.03	.06	.16	.21	1.53	.37	.04	.005	.19
IN.	.07	.04	.05	.04	.06	.18	.23	1.76	.41	.04	.01	.22
AC-FT	45	26	34	26	41	116	151	1140	268	28	4.1	140
(††)	.95	.50	2.54	1.46	2.22	2.87	2.03	8.23	0	.82	1.64	12.06

CAL YR 1979 TOTAL - MEAN - MAX - MIN - CFSM - IN - AC-FT - †† -
WTR YR 1980 TOTAL 1020.29 MEAN 2.79 MAX 73 MIN .00 CFSM .23 IN 3.11 AC-FT 2020 †† 35.32

†† Rainfall on watershed, in inches, based on one rain gage.

08158810 BEAR CREEK BELOW FARM ROAD 1826 NEAR DRIFTWOOD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: March 1978 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
OCT 31...	1020	.57	489	7.8	16.0	5	.40	7.7	79	1.0
JAN 16...	1220	.57	501	8.0	17.5	5	--	9.5	100	.8

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
OCT 31...	470	210	100	--	--	--	--	--	--
JAN 16...	200	28	27	240	28	67	18	8.0	.2

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)
OCT 31...	--	--	--	--	--	--	--	--	5
JAN 16...	1.0	260	0	24	15	.2	8.3	270	0

DATE	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 31...	4	.03	.000	.03	.010	.44	.45	.000	2.8
JAN 16...	0	.03	.000	.03	.000	.10	.10	.010	7.9

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
JAN 16...	1220	0	30	<1	0	0	<10

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN 16...	0	1	.0	0	0	<3

08158810 BEAR CREEK BELOW FARM ROAD 1826 NEAR DRIFTWOOD, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L)
JAN 16...	1220	<3.7	<5.5	<2.7	<2.8	.09	1.0

DATE	TIME	PCB TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JAN 16...	1220	.00	.0	.00	.0	.00	.00	.00	.00

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JAN 16...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 16...	.00	.00	.00	.00	0	.00	.00	.00	.00

08158825 LITTLE BEAR CREEK AT FARM ROAD 1626 NEAR MANCHACA, TX

LOCATION.--Lat 30°07'31", long 97°51'43", Hays County, Hydrologic Unit 12090205, on downstream side of culvert on Farm Road 1626 and 2.1 mi (3.4 km) southwest of Manchaca.

DRAINAGE AREA.--21.0 mi² (183.8 km²).

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1978 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)
APR 25...	0940	.20	282	6.7	18.5	60	280	5.9	64	9.3	130	56
25...	1415	.14	--	--	--	--	--	--	--	--	--	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
APR 25...	50	1.6	3.8	.1	5.1	92	0	60	5.9	.2	8.9
25...	--	--	--	--	5.1	--	--	--	--	--	--

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
APR 25...	181	266	34	.62	.010	.63	.320	1.5	1.8	.570	18
25...	--	--	--	--	--	--	--	--	--	--	--

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
APR 25...	0940	0	20	<1	0	3	120

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
APR 25...	0	80	.1	0	0	5

DATE	TIME	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L)
APR 25...	1415	<2.0	4.8	<3.0	7.0	5.5	7.9	5.6	7.5	.05	.32

08158825 LITTLE BEAR CREEK AT FARM ROAD 1626 NEAR MANCHACA, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	PCB TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
APR									
25...	0940	.00	.0	.00	.0	.00	.00	.00	.27

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
APR									
25...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
APR									
25...	.00	.00	.00	.00	0	.00	.47	.01	.00

08158840 SLAUGHTER CREEK AT FARM ROAD 1826 NEAR AUSTIN, TX

LOCATION.--Lat 30°12'32", long 97°54'11", Travis County, Hydrologic Unit 12090205, 1.7 mi (2.7 km) south of the intersection of U.S. Highway 290 and Farm Road 1826 and 11.9 mi (19.1 km) southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--8.24 mi^2 (21.3 km^2).

PERIOD OF RECORD.--January 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 876.14 ft (267.047 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. No known regulation or diversion. There is a recording rain gage in the watershed.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,500 ft^3/s (70.8 m^3/s) May 21, 1979, gage height, 9.00 ft (2.743 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 607 ft^3/s (17.2 m^3/s) May 12 at 1245 hours, gage height, 6.07 ft (1.850 m), no other peak above base of 500 ft^3/s (14.2 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.29	.01	.01	.01	.00	.22	1.5	.91	3.1	.27	.00	.00
2	.24	.01	.01	.01	.00	.13	2.0	.91	3.1	.24	.00	.00
3	.24	.01	.01	.01	.00	.18	1.2	.88	2.9	.24	.00	.00
4	.21	.01	.01	.01	.00	.18	1.1	.73	2.4	.21	.00	.00
5	.18	.01	.01	.01	.00	.15	1.1	.73	2.2	.21	.00	.00
6	.18	.01	.01	.01	.00	.15	1.1	.67	2.0	.15	.00	.00
7	.18	.01	.01	.01	.01	.18	1.1	1.1	2.0	.15	.00	.03
8	.18	.01	.01	.01	.01	.18	1.0	76	1.6	.15	.00	.00
9	.13	.02	.01	.01	.02	.18	1.0	7.7	1.6	.15	.00	.00
10	.09	.01	.01	.01	.01	.18	1.0	4.7	1.6	.12	.00	.00
11	.10	.01	.01	.01	.01	.18	1.0	4.4	1.6	.09	.00	.00
12	.10	.01	.04	.01	.01	.18	1.0	104	1.3	.08	.00	.00
13	.10	.01	.02	.01	.01	.18	1.7	99	1.2	.05	.00	.00
14	.09	.01	.01	.01	.01	.18	1.6	134	1.1	.04	.00	.00
15	.09	.01	.01	.01	.01	.18	1.5	108	1.1	.03	.00	.00
16	.08	.01	.01	.01	.11	.19	1.1	94	1.0	.02	.00	.00
17	.07	.01	.00	.01	.08	.21	1.0	48	.90	.00	.00	.00
18	.05	.01	.00	.01	.08	.21	1.0	28	.74	.00	.00	.00
19	.05	.01	.00	.01	.10	.21	.91	27	.74	.00	.00	.01
20	.03	.01	.00	.02	.10	.21	.91	19	.66	.00	.00	.00
21	.02	.01	.00	.02	.13	.21	.91	16	.59	.00	.00	.00
22	.02	.01	.00	.02	.13	.21	.91	12	.52	.00	.00	.00
23	.01	.01	.03	.00	.13	.21	.89	11	.51	.00	.00	.00
24	.01	.01	.02	.00	.13	.21	.73	9.1	.46	.00	.00	.00
25	.01	.01	.01	.00	.11	.19	3.9	7.2	.45	.00	.00	.03
26	.01	.01	.01	.00	.11	.18	1.3	6.7	.42	.00	.00	3.3
27	.01	.01	.01	.00	.14	12	1.1	5.7	.38	.00	.00	.15
28	.01	.01	.03	.00	.15	1.4	1.0	4.8	.34	.00	.00	.37
29	.01	.00	.02	.00	.56	1.0	.99	4.8	.34	.00	.00	.06
30	.02	.00	.01	.00	---	.91	.91	4.1	.34	.00	.00	4.7
31	.02	---	.01	.00	---	.78	---	3.7	---	.00	.00	---
TOTAL	2.83	.29	.35	.25	2.16	20.96	36.46	844.83	37.19	2.20	.00	8.65
MEAN	.091	.010	.011	.008	.074	.68	1.22	27.3	1.24	.071	.000	.29
MAX	.29	.02	.04	.02	.56	12	3.9	134	3.1	.27	.00	4.7
MIN	.01	.00	.00	.00	.00	.13	.73	.67	.34	.00	.00	.00
CFSM	.01	.001	.001	.001	.009	.08	.15	3.31	.15	.009	.000	.04
IN.	.01	.00	.00	.00	.01	.09	.16	3.81	.17	.01	.00	.04
AC-FT	5.6	.6	.7	.5	4.3	42	72	1680	74	4.4	.00	17
(††)	.98	.50	3.00	1.49	3.07	3.00	2.44	7.21	.06	.17	.74	10.87

CAL YR 1979 TOTAL 3805.05 MEAN 10.4 MAX 250 MIN .00 CFSM 1.26 IN 17.18 AC-FT 7550 †† 40.06
WTR YR 1980 TOTAL 956.17 MEAN 2.61 MAX 134 MIN .00 CFSM .32 IN 4.32 AC-FT 1900 †† 33.53

†† Rainfall on watershed, in inches, based on one rain gage.

08158860 SLAUGHTER CREEK AT FARM ROAD 2304 NEAR AUSTIN, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 30°09'43", long 97°49'55", Travis County, Hydrologic Unit 12090205, at downstream side of bridge on Farm Road 2304 and 9.4 mi (15.1 km) southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--23.1 mi² (59.8 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1978 to current year.

GAGE.--Flood-hydrograph recorder and crest-stage gage. Datum of gage is 654.80 ft (199.583 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Additional storm rainfall-runoff data for this site can be obtained from the report "Hydrologic Data for Urban Studies in the Austin, Texas Metropolitan Area, 1980."

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,000 ft³/s (85.0 m³/s) May 22, 1979, gage height, 10.20 ft (3.109 m), from rating curve extended above 100 ft³/s (2.83 m³/s) on basis of computation of flow over dam at gage height 9.64 ft (2.938 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 179 ft³/s (5.07 m³/s) May 14 at 0030 hours, gage height, 3.54 ft (1.079 m).

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1978 to September 1979.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
MAY 13...	1030	32	274	8.2	25.0	70	28	8.2	100	2.3

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	•CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
MAY 13...	52000	9200	8200	130	20	37	8.2	6.4	.2

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)
MAY 13...	3.3	130	0	18	12	.1	11	160	50

DATE	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
MAY 13...	38	.07	.010	.08	.010	.85	.86	.060	11

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
MAY 13...	1030	1	20	<1	0	1	40

08158860 SLAUGHTER CREEK AT FARM ROAD 2304 NEAR AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGANESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELENIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
MAY 13...	0	1	.0	0	0	<3

DATE	TIME	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L)
MAY 13...	1030	<1.3	2.0	<1.9	2.9	4.8	1.8	4.6	1.7	.10	74

DATE	TIME	PCB TOTAL (UG/L)	NAPHTHALENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
MAY 13...	1030	.00	.0	.00	.0	.00	.00	.00	.12

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
MAY 13...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
MAY 13...	.00	.00	.00	.00	0	.00	.01	.00	00

08158920 WILLIAMSON CREEK AT OAK HILL, TX

LOCATION.--Lat 30°14'06", long 97°51'36", Travis County, Hydrologic Unit 12090205, on downstream side of bridge on U.S. Highway 290 in Oak Hill, 0.8 mi (1.3 km) east of the intersection of U.S. Highway 290 and State Highway 71, and 7.7 mi (12.4 km) southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--6.30 mi² (16.32 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1974 to February 1977 (periodic discharge measurements only), January 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 798.68 ft (243.438 m) National Geodetic Vertical Datum of 1929 (levels from city of Austin bench mark).

REMARKS.--Water-discharge records fair. Station is part of a hydrologic-research project to study rainfall-runoff relation for the Austin urban-rural areas. Two recording rain gages are located in the watershed.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,130 ft³/s (60.3 m³/s) May 21, 1979, gage height, 6.46 ft (1.969 m); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 696 ft³/s (19.7 m³/s) May 12 at 1215 hours, gage height, 4.24 ft (1.292 m), no other peak above base of 500 ft³/s (14.2 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	1.8	4.3	.18	12	.00	.00	.00
2	.00	.00	.00	.00	.00	.70	6.1	.14	10	.00	.00	.00
3	.00	.00	.00	.00	.00	.70	3.6	.15	10	.00	.00	.00
4	.00	.00	.00	.00	.00	.70	2.6	.17	8.5	.00	.00	.00
5	.00	.00	.00	.00	.00	.70	2.3	.17	7.8	.00	.00	.00
6	.00	.00	.00	.00	.00	.70	2.1	.17	6.9	.00	.00	.27
7	.00	.00	.00	.00	1.0	.70	2.0	2.7	6.2	.00	.00	8.8
8	.00	.00	.00	.00	.54	.70	1.4	23	5.8	.00	.00	.50
9	.00	.00	.00	.00	5.9	.70	1.2	1.8	6.0	.00	.00	.00
10	.00	.00	.00	.00	1.2	.60	1.2	1.3	5.9	.00	.00	.00
11	.00	.00	.00	.00	.97	.46	1.2	1.2	5.4	.00	.00	.00
12	.00	.00	2.2	.00	.71	.40	1.7	63	4.7	.00	.00	.00
13	.00	.00	.10	.00	.46	.29	3.1	56	4.2	.00	.00	.00
14	.00	.00	.00	.00	.46	.29	1.7	51	3.4	.00	.00	.00
15	.00	.00	.00	.00	.32	.29	1.5	44	2.6	.00	.00	.00
16	.00	.00	.00	.00	3.5	.53	1.5	42	2.2	.00	.00	.00
17	.00	.00	.00	.00	1.2	.45	1.5	26	1.7	.00	.00	.00
18	.00	.00	.00	.00	1.2	.29	1.2	17	1.1	.00	.00	.00
19	.00	.00	.00	.00	1.1	.31	1.2	16	.79	.00	.00	22
20	.00	.00	.00	.69	1.0	.41	1.2	11	.48	.00	.00	.00
21	.00	.00	.00	1.8	.95	.29	1.2	9.7	.53	.00	.00	.00
22	.00	.00	.00	.77	.80	.29	1.2	8.8	.52	.00	.00	.00
23	.00	.00	2.6	.01	.72	.42	1.1	8.4	.22	.00	.00	.00
24	.00	.00	.00	.00	.64	.41	1.0	8.8	.12	.00	.00	.00
25	.00	.00	.00	.00	.46	.82	10	9.5	.04	.00	.00	4.8
26	.00	.00	.00	.00	.41	.85	.23	11	.00	.00	.00	13
27	.00	.00	.00	.00	.29	36	.18	11	.00	.00	.00	5.8
28	.00	.00	5.5	.00	.29	9.3	.17	12	.00	.00	.00	8.0
29	.00	.00	.80	.00	3.2	4.8	.17	14	.00	.00	.00	1.5
30	.03	.00	.00	.00	---	3.2	.23	13	.00	.00	.00	2.2
31	.00	---	.00	.00	---	2.7	---	12	---	.00	.00	---
TOTAL	.03	.00	11.20	3.27	27.32	70.80	58.08	475.18	107.10	.00	.00	66.87
MEAN	.001	.000	.36	.11	.94	2.28	1.94	15.3	3.57	.000	.000	2.23
MAX	.03	.00	5.5	1.8	5.9	36	10	63	12	.00	.00	22
MIN	.00	.00	.00	.00	.00	.29	.17	.14	.00	.00	.00	.00
CFSM	.000	.000	.06	.02	.15	.36	.31	2.43	.57	.000	.000	.35
IN.	.00	.00	.07	.02	.16	.42	.34	2.81	.63	.00	.00	.39
AC-FT	.06	.00	22	6.5	54	140	115	943	212	.00	.00	133
(††)	.66	.72	3.72	1.73	2.78	3.04	2.17	6.63	.59	.10	.84	9.93

CAL YR 1979 TOTAL 2617.26 MEAN 7.17 MAX 238 MIN .00 CFSM 1.14 IN 15.45 AC-FT 5190 †† 44.19
WTR YR 1980 TOTAL 819.85 MEAN 2.24 MAX 63 MIN .00 CFSM .36 IN 4.84 AC-FT 1630 †† 32.91

†† Weighted-mean rainfall on watershed, in inches, based on two rain gages.

08158920 WILLIAMSON CREEK AT OAK HILL, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Occasional discharge measurements: January 1974 to current year. Chemical, biochemical, and pesticide analyses: January 1974 to current year. Radiochemcial analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
APR 25...	1045	1.7	439	7.0	21.5	10	38	4.4	51	1.9
SEP 26...	1020	.85	455	7.6	23.0	15	44	--	--	2.4

DATE	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
APR 25...	--	--	--	220	39	60	17	11	.3
SEP 26...	K58000	K9500	12000	210	32	62	14	10	.3

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)
APR 25...	2.0	220	0	31	15	.2	5.5	250	51
SEP 26...	2.3	220	0	32	16	.2	7.3	252	37

DATE	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
APR 25...	14	.66	.010	.67	.000	.64	.64	.220	6.9
SEP 26...	17	.55	.010	.56	.000	.59	.59	.230	8.3

DATE	TIME	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
APR 25...	1045	2	30	<1	0	2	20
SEP 26...	1020	1	30	<1	10	<10	30

DATE	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
APR 25...	0	5	.4	0	0	<3
SEP 26...	16	<1	.0	0	0	<3

08158920 WILLIAMSON CREEK AT OAK HILL, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L)
APR											
25...	1045	<2.6	1.4	<3.8	2.1	2.3	1.8	2.3	1.7	.06	.70

DATE	TIME	PCB TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
APR									
25...	1045	.00	.0	.00	.0	.00	.00	.00	.19

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
APR									
25...	.00	.00	.00	.00	.00	.00	.00	.03	.00

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
APR									
25...	.00	.00	.00	.00	0	.00	1.0	.00	.00

08158970 WILLIAMSON CREEK AT JIMMY CLAY ROAD, AUSTIN, TX

LOCATION.--Lat 30°11'21", long 97°43'56", Travis County, Hydrologic Unit 12090205, at Jimmy Clay Road, 0.5 mi (0.8 km) southeast of the intersection of Jimmy Clay and Nuckles Crossing Roads, and 5.9 mi (9.5 km) south of the State Capitol in Austin.

DRAINAGE AREA.--27.6 mi^2 (71.5 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1974 to September 1975 (periodic discharge measurements only), September 1975 to current year.

GAGE.--Water-stage recorder. Datum of gage is 497.18 ft (151.540 m) National Geodetic Vertical Datum of 1929 (city of Austin bench mark).

REMARKS.--Water-discharge records fair. No known regulation or diversion in watershed. There are three recording rain gages located in the watershed. The station is part of a hydrologic research project to study the rainfall-runoff relationships for the Austin urban-rural areas.

AVERAGE DISCHARGE.--5 years, 7.36 ft^3/s (0.208 m^3/s), 3.62 in/yr (92 mm/yr), 5,330 acre-ft/yr (6.57 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,100 ft^3/s (286 m^3/s) Nov. 23, 1974, gage height, 15.2 ft (4.63 m), from floodmark, by slope-area measurement; minimum daily, 0.03 ft^3/s (0.001 m^3/s) Sept. 16, 24, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--The maximum flood since 1869 occurred on Sept. 9 or 10, 1921, stage and discharge not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft^3/s (14.2 m^3/s) and maximum (*):

Date	Time	Discharge		Gage height	
		(ft^3/s)	(m^3/s)	(ft)	(m)
Mar. 27	1045	517	14.6	5.23	1.594
May 8	0830	506	14.3	5.19	1.582
May 13	2230	*737	20.9	5.94	1.811

Minimum daily discharge, 0.13 ft^3/s (0.004 m^3/s) July 27, 28, Aug. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	.32	1.4	1.1	1.6	5.7	1.6	1.5	1.9	.54	.21	.53
2	.43	.32	1.5	1.0	1.8	1.7	4.6	1.4	1.9	.54	.21	.70
3	.79	.38	1.6	.90	1.9	1.1	2.3	1.3	1.6	.54	.16	.69
4	.72	.38	1.6	.82	1.9	1.1	1.6	1.3	1.6	.46	.16	.63
5	.72	.32	1.5	.82	2.2	1.2	1.3	1.2	1.6	.46	.13	.63
6	.76	.26	1.4	.96	2.5	.98	1.3	1.1	1.6	.44	.16	.84
7	.72	.26	1.5	1.1	3.6	1.0	1.4	21	1.4	.39	.19	27
8	.72	.26	1.6	.99	10	1.6	1.5	139	1.4	.39	.24	4.1
9	.60	.21	1.6	1.2	14	2.0	1.3	11	1.3	.34	.26	.64
10	.46	.17	1.6	1.3	3.2	2.0	1.3	5.2	1.3	.26	.27	2.6
11	.43	.15	1.6	1.5	2.0	1.9	1.3	4.1	1.2	.26	.25	.37
12	.44	.17	5.0	1.6	1.8	1.6	1.8	65	1.1	.26	.21	.28
13	.46	.19	6.4	1.5	1.7	1.0	5.5	127	.91	.21	.21	.36
14	.39	.24	.54	1.6	1.9	.90	2.1	76	.82	.21	.21	.43
15	.36	.26	.46	1.6	2.2	.98	1.3	32	.82	.21	.21	.46
16	.39	.29	.46	1.6	10	1.2	1.2	19	.72	.21	.28	.46
17	.36	.32	.38	2.0	2.4	1.3	1.2	12	.72	.21	.21	.54
18	.32	.36	.35	1.6	1.5	1.2	1.4	6.0	.81	.21	.21	.54
19	.32	.41	.39	1.3	1.4	1.4	1.4	5.7	.92	.26	.21	13
20	.31	.49	.39	2.5	1.4	1.5	1.4	3.4	.82	.21	.25	1.8
21	.26	1.2	.42	1.9	1.3	1.3	1.4	4.5	1.5	.20	.26	.69
22	.26	.34	.53	12	1.4	1.3	1.3	2.5	.68	.17	.32	.54
23	.24	.48	4.9	3.6	1.5	1.4	1.0	2.4	.54	.17	.32	.54
24	.21	.68	1.5	2.1	1.3	1.2	.82	2.2	.46	.17	.32	.68
25	.21	.66	.54	2.0	1.3	1.3	48	2.1	.49	.17	.32	2.4
26	.19	.78	.41	1.8	1.2	1.5	2.5	2.1	.54	.17	.39	36
27	.21	.70	.68	1.6	1.3	173	1.2	2.2	.54	.13	.39	7.7
28	.22	1.1	22	1.6	1.4	12	.84	2.0	.54	.13	.39	14
29	.21	1.2	17	1.6	2.0	4.1	.89	2.0	.54	.17	.39	3.0
30	.31	1.2	2.1	1.6	---	2.4	1.2	2.0	.54	.17	.46	22
31	.36	---	1.3	1.6	---	1.9	---	2.0	---	.21	.46	---
TOTAL	12.58	14.10	82.65	58.39	81.7	232.76	95.95	560.2	30.81	8.47	8.26	144.15
MEAN	.41	.47	2.67	1.88	2.82	7.51	3.20	18.1	1.03	.27	.27	4.81
MAX	.79	1.2	22	12	14	173	48	139	1.9	.54	.46	36
MIN	.19	.15	.35	.82	1.2	.90	.82	1.1	.46	.13	.13	.28
CFSM	.02	.02	.10	.07	.10	.27	.12	.66	.04	.01	.01	.17
IN.	.02	.02	.11	.08	.11	.31	.13	.76	.04	.01	.01	.19
AC-FT	25	28	164	116	162	462	190	1110	61	17	16	286
(††)	.75	.74	3.64	1.64	2.69	3.19	2.64	7.34	.22	.18	.90	9.12

CAL YR 1979 TOTAL 4727.01 MEAN 13.0 MAX 1190 MIN .15 CFSM .47 IN 6.37 AC-FT 9380 †† 44.09
WTR YR 1980 TOTAL 1330.02 MEAN 3.63 MAX 173 MIN .13 CFSM .13 IN 1.79 AC-FT 2640 †† 33.05

†† Weighted-mean rainfall on watershed, in inches, based on three rain gages.

08158970 WILLIAMSON CREEK AT JIMMY CLAY ROAD, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1975 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
OCT 30...	1040	.21	865	7.6	21.5	5	1.0	3.1	36	3.5
JAN 14...	1335	1.6	727	7.7	14.5	10	--	8.5	86	2.6

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
OCT 30...	840	240	480	--	--	--	--	--	--
JAN 14...	190	50	K14	290	22	99	11	39	1.0

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)
OCT 30...	--	--	--	--	--	--	--	--	2
JAN 14...	3.5	330	0	39	45	.4	10	410	0

DATE	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 30...	2	.73	.150	.88	.440	.86	1.3	.010	24
JAN 14...	0	.81	.120	.93	.940	.26	1.2	.010	9.9

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
JAN 14...	1335	3	200	<1	0	0	<10

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN 14...	0	190	.0	0	0	<3

08158970 WILLIAMSON CREEK AT JIMMY CLAY ROAD, AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	GROSS ALPHA, DIS- SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L)
JAN 14...	1335	<5.2	<.3	<7.7	<.4	<3.3	<.4	<3.1	<.4	.08	1.4

DATE	TIME	PCB TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
JAN 14...	1335	.00	.0	.00	.0	.00	.00	.00	.00

DATE	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)
JAN 14...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 14...	.00	.00	.00	.00	0	.00	.00	.00	.00

08159000 ONION CREEK AT U.S. HIGHWAY 183 NEAR AUSTIN, TX

LOCATION.--Lat 30°10'40", long 97°41'18", Travis County, Hydrologic Unit 12090205, on right bank at downstream side of downstream bridge on U.S. Highway 183, 2.4 mi (3.9 km) downstream from Williamson Creek, 3.2 mi (5.1 km) southwest of Del Valle, and 7.5 mi (11.7 km) southeast of the State Capitol Building in Austin.

DRAINAGE AREA.--321 mi² (831 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1924 to March 1930, March 1976 to current year. In 1924-30 station was published as "near Del Valle."

GAGE.--Water-stage recorder. Datum of gage is 442.85 ft (134.981 m) State Department of Highways and Public Transportation datum. May 15, 1924, to Mar. 15, 1930, nonrecording gage at highway bridge 1,700 ft (518 m) upstream at 6.42-foot (1.957 m) higher datum.

REMARKS.--Water-discharge records fair. Flow is slightly regulated by several small ponds on main channel and tributaries above station.

AVERAGE DISCHARGE.--9 years (water years 1925-29, 1977-80), 74.8 ft³/s (2.118 m³/s), 3.16 in/yr (80 mm/yr), 54,190 acre-ft/yr (66.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 76,000 ft³/s (2,150 m³/s) May 28, 1929, gage height, 30.5 ft (9.30 m), present datum; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1869 occurred about July 3, 1869, stage about 38 ft (11.6 m) from newspaper accounts, and Sept. 9, 1921, stage 38.0 ft (11.58 m) from floodmark, present site and datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,570 ft³/s (72.8 m³/s) May 13 at 2400, gage height, 10.14 ft (3.091 m), no other peak above base of 2,500 ft³/s (70.8 m³/s); no flow July 13 to Sept. 6, Sept. 13-18, and Sept. 23-25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	4.1	2.9	8.0	5.5	22	12	5.5	15	1.6	.00	.00
2	2.4	2.4	2.4	7.1	5.5	9.8	14	5.4	13	1.3	.00	.00
3	1.6	2.4	2.4	6.3	5.5	7.2	14	4.8	13	1.0	.00	.00
4	1.2	2.4	2.4	5.5	6.3	6.4	9.7	4.8	13	.94	.00	.00
5	.93	2.4	3.0	5.5	5.5	6.3	9.4	4.1	12	.91	.00	.00
6	.69	2.4	3.0	4.8	5.5	5.5	8.1	4.1	10	.59	.00	.00
7	.60	2.4	3.0	4.1	6.3	5.5	8.0	45	9.3	.49	.00	39
8	.60	2.4	3.0	4.1	27	5.5	7.7	448	8.0	.41	.00	12
9	.60	2.4	3.0	4.1	35	5.5	6.3	47	7.1	.20	.00	5.2
10	.57	2.4	4.1	4.1	18	5.5	6.3	18	9.1	.16	.00	5.0
11	.47	2.4	5.5	5.5	11	5.5	6.3	12	9.0	.12	.00	2.6
12	.47	2.4	6.7	4.8	8.9	5.5	6.3	145	8.8	.08	.00	.50
13	.68	2.4	30	4.8	8.0	5.5	14	510	7.8	.00	.00	.00
14	.78	2.7	12	4.1	7.1	5.5	12	1010	6.4	.00	.00	.00
15	.78	3.1	7.2	4.1	6.3	6.3	7.9	366	4.8	.00	.00	.00
16	.91	2.9	5.5	4.1	27	6.3	6.4	289	4.9	.00	.00	.00
17	1.0	2.9	4.8	4.1	21	6.9	5.6	190	4.8	.00	.00	.00
18	1.0	3.5	4.1	5.5	14	6.3	5.5	93	4.2	.00	.00	.00
19	1.3	4.1	3.5	8.0	11	6.3	4.9	62	3.7	.00	.00	16
20	1.3	4.1	3.5	8.9	8.0	6.3	4.8	47	3.4	.00	.00	5.8
21	1.3	6.3	3.5	8.0	7.2	5.6	4.1	693	19	.00	.00	1.3
22	1.2	11	3.5	18	6.3	5.8	3.5	316	10	.00	.00	.12
23	1.0	5.5	18	22	6.3	6.3	3.5	125	5.3	.00	.00	.00
24	1.0	3.5	21	12	6.2	5.9	3.8	85	3.6	.00	.00	.00
25	1.0	4.1	8.0	8.9	5.5	5.5	123	62	3.1	.00	.00	.00
26	1.0	4.8	6.3	7.1	5.5	6.1	19	46	2.6	.00	.00	66
27	1.1	3.5	5.5	6.3	5.5	424	10	36	2.3	.00	.00	14
28	1.3	3.0	17	6.3	5.5	112	7.6	28	2.3	.00	.00	32
29	1.6	3.0	88	5.5	5.5	33	5.6	21	2.0	.00	.00	12
30	2.0	2.9	19	5.5	---	20	5.5	18	1.9	.00	.00	74
31	3.0	---	11	5.5	---	15	---	17	---	.00	.00	---
TOTAL	36.28	103.8	312.8	212.6	295.9	778.8	354.8	4757.7	219.4	7.80	.00	285.52
MEAN	1.17	3.46	10.1	6.86	10.2	25.1	11.8	153	7.31	.25	.000	9.52
MAX	3.0	11	88	22	35	424	123	1010	19	1.6	.00	74
MIN	.47	2.4	2.4	4.1	5.5	5.5	3.5	4.1	1.9	.00	.00	.00
CFSM	.004	.01	.03	.02	.03	.08	.04	.48	.02	.001	.000	.03
IN.	.00	.01	.04	.02	.03	.09	.04	.55	.03	.00	.00	.03
AC-FT	72	206	620	422	587	1540	704	9440	435	15	.00	566

CAL YR 1979 TOTAL 49817.48 MEAN 136 MAX 3790 MIN .47 CFSM .42 IN 5.77 AC-FT 98810
WTR YR 1980 TOTAL 7365.40 MEAN 20.1 MAX 1010 MIN .00 CFSM .06 IN .85 AC-FT 14610

08159000 ONION CREEK AT U.S. HIGHWAY 183 NEAR AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1976 to current year. Sediment analyses: October 1976 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
OCT										
23...	1251	1.0	--	--	--	--	--	--	--	--
30...	0940	2.0	656	8.1	22.0	5	1.5	7.1	85	.9
JAN										
15...	1045	4.1	641	8.1	13.0	5	--	10.8	104	.8
APR										
15...	1150	8.8	--	--	18.0	--	--	--	--	--
MAY										
14...	1420	895	313	7.9	20.5	80	130	9.2	103	3.0
28...	1400	19	510	7.8	27.5	--	--	--	--	--

DATE	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)
OCT										
23...	--	--	--	--	--	--	--	--	--	--
30...	350	51	110	--	--	--	--	--	--	--
JAN										
15...	70	23	K4	240	19	75	13	39	1.1	2.6
APR										
15...	--	--	--	--	--	--	--	--	--	--
MAY										
14...	88000	12000	19000	140	13	42	7.6	9.6	.4	3.6
28...	--	--	--	210	13	66	11	16	.5	2.5

DATE	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)
OCT										
23...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	9	0	.00
JAN										
15...	270	0	45	41	.3	6.3	355	3	1	.48
APR										
15...	--	--	--	--	--	--	--	--	--	--
MAY										
14...	150	0	22	10	.2	13	182	211	10	.26
28...	240	0	32	17	.2	9.1	272	--	--	.14

DATE	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY)
OCT									
23...	--	--	--	--	--	--	--	--	--
30...	.000	.00	.000	.61	.61	.010	8.9	--	--
JAN									
15...	.010	.49	.080	.14	.22	.010	4.1	--	--
APR									
15...	--	--	--	--	--	--	--	67	1.6
MAY									
14...	.010	.27	.070	1.0	1.1	.170	11	222	536
28...	.010	.15	.040	.63	.67	.020	5.3	--	--

DATE	TIME	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
JAN							
15...	1045	1	70	<1	0	1	<10
MAY							
14...	1420	1	30	<1	0	1	40
28...	1400	2	50	<1	0	1	<10

08159000 ONION CREEK AT U.S. HIGHWAY 183 NEAR AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN						
15...	0	2	.0	0	0	<3
MAY						
14...	0	<1	.0	0	0	<3
28...	0	3	.0	0	0	<3

DATE	TIME	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L)
JAN											
15...	1045	<4.7	<.3	<6.9	<.4	3.0	<.4	2.8	<.4	.09	1.1

DATE	TIME	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JAN									
15...	1045	.0	.00	.00	.0	.00	.00	.00	.00

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JAN									
15...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN									
15...	.00	.00	.00	.00	0	.00	.00	.00	.00

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, WATER (DEG C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)
APR					
15...	1150	8.8	18.0	67	1.6
MAY					
14...	1620	895	20.5	222	536

08159150 WILBARGER CREEK NEAR PFLUGERVILLE, TX

LOCATION.--Lat 30°27'16", long 97°36'02", Travis County, Hydrologic Unit 12090301, on left bank downstream from county road (Pfluger Lane), 800 ft (240 m) downstream from Farm Road 685, 1.6 mi (2.6 km) northeast of Pflugerville, and 1.9 mi (3.1 km) downstream from Missouri-Kansas-Texas Railroad.

DRAINAGE AREA.--4.61 mi² (11.9 km²).

PERIOD OF RECORD.--August 1963 to September 1980 (discontinued).
Water-quality records: Chemical, biochemical, and pesticide analyses: October 1970 to September 1971.

GAGE.--Water-stage recorder, concrete control, and crest-stage gages. Datum of gage is 670.61 ft (204.402 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--17 years, 1.86 ft³/s (0.053 m³/s), 5.48 in/yr (139 mm/yr), 1,350 acre-ft/yr (1.66 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,760 ft³/s (49.8 m³/s) June 16, 1964, gage height, 6.92 ft (2.109 m); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1894, occurred in September 1921, stage unknown from information by local residents, discharge, 2,300 ft³/s (65.1 m³/s), from Corps of Engineers publication "Flood Plain Information, Williamson Creek, Austin, Texas".

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 249 ft³/s (7.05 m³/s) May 15 at 2115 hours, gage height, 3.03 ft (0.924 m), no peak above base of 400 ft³/s (11.3 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.04	.06	.38	1.0	2.4	1.0	.00	.00	.00
2	.00	.00	.00	.04	.06	.25	1.2	.70	.89	.00	.00	.00
3	.00	.00	.00	.03	.06	.25	1.2	.55	.79	.00	.00	.00
4	.00	.00	.00	.03	.06	.25	.89	.49	.79	.00	.00	.00
5	.00	.00	.00	.03	.06	.25	.79	.43	.70	.00	.00	.00
6	.00	.00	.00	.03	.06	.25	.70	.38	.62	.00	.00	.00
7	.00	.00	.00	.03	.09	.25	.70	.70	.49	.00	.00	.00
8	.00	.00	.00	.03	.29	.25	.55	14	.43	.00	.00	.00
9	.00	.00	.00	.03	.38	.25	.49	2.9	.43	.00	.00	.00
10	.00	.00	.00	.03	.25	.25	.49	1.5	.43	.00	.00	.00
11	.00	.00	.00	.03	.25	.25	.49	1.4	.38	.00	.00	.00
12	.00	.00	.00	.04	.25	.25	3.1	29	.33	.00	.00	.00
13	.00	.00	.00	.05	.25	.21	3.6	61	.33	.00	.00	.00
14	.00	.00	.00	.05	.21	.21	1.5	37	.43	.00	.00	.00
15	.00	.00	.00	.05	.21	.21	.89	63	.33	.00	.00	.00
16	.00	.00	.00	.05	.79	.21	.70	39	.25	.00	.00	.00
17	.00	.00	.00	.05	.55	.21	.62	15	.21	.00	.00	.00
18	.00	.00	.00	.04	.49	.18	.55	9.1	.21	.00	.00	.00
19	.00	.00	.00	.04	.43	.18	.49	14	.18	.00	.00	.00
20	.00	.00	.00	.05	.33	.18	.49	6.0	.15	.00	.00	.00
21	.00	.00	.00	.05	.29	.18	.43	4.8	.11	.00	.00	.00
22	.00	.00	.00	.21	.25	.18	.38	3.8	.08	.00	.00	.00
23	.00	.00	.02	.11	.25	.21	.38	2.9	.06	.00	.00	.00
24	.00	.00	.01	.06	.25	.18	.38	2.4	.04	.00	.00	.00
25	.00	.00	.00	.06	.21	.15	5.1	2.2	.03	.00	.00	.00
26	.00	.00	.00	.06	.21	.18	.89	2.0	.02	.00	.00	.00
27	.00	.00	.00	.05	.21	19	.55	1.6	.01	.00	.00	.00
28	.00	.00	.08	.04	.21	3.6	.49	1.4	.00	.00	.00	.00
29	.00	.00	.06	.05	.21	2.0	.43	1.4	.00	.00	.00	.00
30	.00	.00	.04	.06	---	1.4	.38	1.2	.00	.00	.00	.00
31	.00	---	.04	.06	---	1.1	---	1.1	---	.00	.00	---
TOTAL	.00	.00	.25	1.58	7.22	32.90	29.85	323.35	9.72	.00	.00	.00
MEAN	.000	.000	.008	.051	.25	1.06	1.00	10.4	.32	.000	.000	.000
MAX	.00	.00	.08	.21	.79	19	5.1	63	1.0	.00	.00	.00
MIN	.00	.00	.00	.03	.06	.15	.38	.38	.00	.00	.00	.00
CFSM	.000	.000	.002	.01	.05	.23	.22	2.26	.07	.000	.000	.000
IN.	.00	.00	.00	.01	.06	.27	.24	2.61	.08	.00	.00	.00
AC-FT	.00	.00	.5	3.1	14	65	59	641	19	.00	.00	.00

CAL YR 1979 TOTAL 998.30 MEAN 2.74 MAX 129 MIN .00 AC-FT 1980
WTR YR 1980 TOTAL 404.87 MEAN 1.11 MAX 63 MIN .00 AC-FT 803

08159165 BIG SANDY CREEK NEAR MCDADE, TX

LOCATION.--Lat 30°18'18", long 97°17'48", Bastrop County, Hydrologic Unit 12090301, on left bank at upstream side of left abutment of U.S. Highway 290 bridge, 3.8 mi (6.1 km) northwest of McDade, and 5.3 mi (8.5 km) southeast of Elgin.

DRAINAGE AREA.--38.7 mi^2 (100.2 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1979 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 422 ft (128.6 m), from topographic map.

REMARKS.--Water-discharge records fair. No known regulation or diversion. Station is part of hydrologic-research project to study effects of lignite strip mining on the local water resources. Station has automatic water-quality sampler. Two recording rain gages are located in the watershed.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 989 ft^3/s (28.0 m^3/s) Mar. 27, 1980, gage height, 12.20 ft (3.719 m), from rating curve extended above 424 ft^3/s (12.0 m^3/s); no flow for many days each year.

EXTREMES FOR PERIOD JULY TO SEPTEMBER 1979.--Maximum discharge, 331 ft^3/s (9.37 m^3/s) July 27 at 2400 hours, gage height, 7.05 ft (2.149 m), no other peak above base of 325 ft^3/s (9.20 m^3/s); no flow Sept. 9-19.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 325 ft^3/s (9.20 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 27	2115	*989	28.0	a12.20	3.719
May 14	0230	984	27.9	12.17	3.709

a From rating curve extended above 424 ft^3/s (9.20 m^3/s).

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, JULY TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1										---	.90	.03
2										---	.75	.03
3										---	.63	.03
4										---	.63	.03
5										---	.51	.63
6										---	.51	1.0
7										---	.40	.12
8										---	.51	.01
9										---	.63	.00
10										---	.63	.00
11										---	.51	.00
12										---	.51	.00
13										2.4	.51	.00
14										2.3	.51	.00
15										2.2	.40	.00
16										1.7	.30	.00
17										1.4	.40	.00
18										1.4	.63	.00
19										1.3	.63	.00
20										2.5	.30	.01
21										3.2	.22	.11
22										6.2	.14	.22
23										1.8	.06	.21
24										1.3	.14	.21
25										1.0	.06	.14
26										.90	.06	.06
27										58	.06	.03
28										63	.14	.05
29										3.8	.14	.06
30										1.8	.03	.03
31										1.2	.03	---
TOTAL										---	11.88	3.01
MEAN										---	.38	.10
MAX										---	.90	1.0
MIN										---	.03	.00
CFSM										---	.01	.003
IN.										---	.01	.00
AC-FT										---	24	6.0

WTR YR 1979 TOTAL - MEAN - MAX - MIN - CFSM - IN. - AC-FT -

08159165 BIG SANDY CREEK NEAR MCDADE, TX--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	.00	.03	.69	2.2	8.5	8.3	7.4	1.7	.02	.00	.00
2	.03	.00	.04	.63	2.1	4.0	6.6	4.1	1.5	.00	.00	.00
3	.04	.00	.06	.66	1.9	2.6	5.7	1.5	1.4	.00	.00	.00
4	.66	.00	.10	.63	1.9	2.4	4.6	.93	1.4	.00	.00	.00
5	.01	.00	.14	.55	1.8	2.1	3.3	.54	1.2	.00	.00	.00
6	.02	.00	.17	.64	1.8	1.8	2.7	.39	1.3	.00	.00	.00
7	.04	.00	.14	.73	1.9	1.8	2.9	.94	1.3	.00	.00	.00
8	.06	.00	.18	.63	2.0	1.8	2.8	2.8	1.1	.00	.00	.00
9	.03	.00	.22	.63	2.5	1.7	2.5	4.0	1.0	.00	.00	.00
10	.02	.00	.22	.63	2.3	1.6	2.2	2.2	1.1	.00	.00	.00
11	.04	.00	.25	.79	2.1	1.5	1.8	1.2	1.2	.00	.00	.00
12	.04	.00	.56	.64	1.8	1.6	1.7	14	1.2	.00	.00	.00
13	.03	.01	2.4	.52	2.6	1.7	4.5	193	1.1	.00	.00	.00
14	.03	.01	1.3	.56	2.1	1.5	2.7	469	.88	.00	.00	.00
15	.04	.00	.36	.69	2.1	1.5	2.0	136	.63	.00	.00	.00
16	.03	.01	.16	.81	6.1	1.6	1.0	78	.47	.00	.00	.00
17	.03	.02	.06	.89	7.5	1.9	1.2	23	.36	.00	.00	.00
18	.03	.02	.06	.89	4.2	1.7	.50	8.0	.24	.00	.00	.00
19	.01	.00	.06	1.2	3.9	1.8	.51	5.7	.17	.00	.00	.00
20	.00	.00	.19	6.7	2.7	2.0	.47	5.2	.14	.00	.00	.00
21	.01	.00	1.2	5.1	2.8	1.9	.41	3.8	.19	.00	.00	.00
22	.00	.00	1.8	42	2.2	1.7	.40	3.2	.18	.00	.00	.00
23	.00	.00	2.5	18	2.0	1.8	.46	2.5	.18	.00	.00	.00
24	.00	.00	3.3	5.2	1.8	1.9	.46	2.5	.04	.00	.00	.00
25	.01	.00	2.0	3.6	1.7	2.0	11	2.2	.03	.00	.00	.00
26	.00	.01	1.4	3.2	1.6	2.4	5.6	2.2	.01	.00	.00	.00
27	.00	.03	1.4	2.6	2.0	303	1.8	2.1	.01	.00	.00	.00
28	.00	.03	2.0	2.5	2.1	187	.95	1.9	.01	.00	.00	.00
29	.01	.02	11	2.5	2.1	20	.70	1.8	.03	.00	.00	.00
30	.03	.01	2.2	2.5	---	11	.66	1.9	.04	.00	.00	.00
31	.00	---	1.1	2.3	---	8.1	---	1.8	---	.00	.00	---
TOTAL	1.29	.17	36.60	109.61	73.8	585.9	80.42	983.80	20.11	.02	.00	.00
MEAN	.042	.006	1.18	3.54	2.54	18.9	2.68	31.7	.67	.001	.000	.000
MAX	.66	.03	11	42	7.5	303	11	469	1.7	.02	.00	.00
MIN	.00	.00	.03	.52	1.6	1.5	.40	.39	.01	.00	.00	.00
CFSM	.001	.000	.03	.09	.07	.49	.07	.82	.02	.000	.000	.000
IN.	.00	.00	.04	.11	.07	.56	.08	.95	.02	.00	.00	.00
AC-FT	2.6	.3	73	217	146	1160	160	1950	40	.04	.00	.00
(††)	1.46	.71	3.15	2.40	2.13	3.70	2.40	6.46	.64	.24	.93	3.07

CAL YR 1979 TOTAL - MEAN - MAX - MIN - CFSM - IN - AC-FT - †† -
WTR YR 1980 TOTAL 1891.72 MEAN 5.17 MAX 469 MIN .00 CFSM .13 IN 1.82 AC-FT 3750 †† 27.29

†† Weighted-mean rainfall on watershed, in inches, based on two rain gages.

08159165 BIG SANDY CREEK NEAR MCDADE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: May 1979 to current year. Radiochemical analyses: May to September 1979.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
OCT										
11...	1305	.02	703	7.4	23.5	10	8.0	4.9	58	2.1
11...	1315	.03	--	--	23.5	--	--	--	--	--
NOV										
28...	1225	.22	810	7.2	12.5	5	2.6	4.0	37	1.9
JAN										
09...	1315	.63	911	7.3	10.5	20	3.6	8.5	77	2.5
22...	1700	64	523	7.3	11.0	200	620	10.0	92	3.6
23...	1330	11	--	--	10.5	--	--	--	--	--
MAR										
27...	--	303	--	--	--	--	--	--	--	--
27...	1230	78	1240	--	--	--	--	--	--	--
27...	1330	152	1250	--	--	--	--	--	--	--
27...	1415	229	1100	--	--	--	--	--	--	--
27...	1515	294	900	--	--	--	--	--	--	--
27...	1650	518	393	7.2	15.0	120	720	8.1	78	5.2
27...	1702	552	--	--	15.0	--	--	--	--	--
28...	--	187	--	--	--	--	--	--	--	--
28...	1230	86	212	6.7	16.5	200	230	9.5	98	4.3
28...	1240	85	--	--	16.5	--	--	--	--	--
MAY										
13...	--	193	--	--	--	--	--	--	--	--
13...	1630	127	676	--	--	--	--	--	--	--
13...	1700	155	585	--	--	--	160	--	--	8.4
13...	1830	317	350	--	--	--	--	--	--	--
13...	1900	451	288	--	--	--	--	--	--	--
13...	2100	685	182	--	--	--	540	--	--	7.2
13...	2130	709	176	--	--	--	--	--	--	--
14...	--	469	--	--	--	--	--	--	--	--
14...	1320	140	--	--	21.0	--	--	--	--	--
27...	--	303	--	--	--	--	--	--	--	--

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
OCT										
11...	1300	43	460	200	85	57	14	68	2.1	6.6
11...	--	--	--	--	--	--	--	--	--	--
NOV										
28...	1600	92	250	200	71	58	14	73	2.2	6.1
JAN										
09...	620	49	46	--	--	--	--	--	--	--
22...	--	--	--	130	85	37	10	43	1.6	5.2
23...	--	--	--	--	--	--	--	--	--	--
MAR										
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	88000	56000	310000	110	65	31	7.8	33	1.4	5.8
27...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	50000	29000	91000	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
MAY										
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--

08159165 BIG SANDY CREEK NEAR MCDADE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)
OCT										
11...	140	0	71	130	.4	21	438	.00	.020	.02
11...	--	--	--	--	--	--	--	--	--	--
NOV										
28...	160	0	64	130	.3	25	455	.00	.010	.01
JAN										
09...	--	--	--	--	--	--	--	.00	.020	.01
22...	60	0	87	79	.4	11	303	.32	.020	.34
23...	--	--	--	--	--	--	--	--	--	--
MAR										
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	.08	.010	.09
27...	--	--	--	--	--	--	--	.19	.040	.23
27...	--	--	--	--	--	--	--	.28	.060	.34
27...	--	--	--	--	--	--	--	.37	.090	.46
27...	54	0	59	54	.2	7.1	225	.27	.010	.28
27...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	.57	.030	.60
28...	--	--	--	--	--	--	--	--	--	--
MAY										
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	.23	.040	.27
13...	--	--	--	--	--	--	--	.23	.040	.27
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	.35	.040	.39
13...	--	--	--	--	--	--	--	.28	.030	.31
13...	--	--	--	--	--	--	--	.27	.030	.30
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--

DATE	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	PHENOLS (UG/L)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT										
11...	.030	.51	.54	.020	9.9	1	.10	--	--	--
11...	--	--	--	--	--	--	--	6	.00	--
NOV										
28...	.010	.51	.52	.020	13	1	.00	16	.01	--
JAN										
09...	.030	.97	1.0	.050	6.8	0	.10	21	.04	--
22...	.070	1.5	1.6	.090	15	0	.00	--	--	--
23...	--	--	--	--	--	--	--	203	6.0	--
MAR										
27...	--	--	--	--	--	--	--	592	484	--
27...	.160	1.5	1.7	.160	19	--	--	268	56	64
27...	.250	1.7	1.9	.190	48	--	--	--	--	--
27...	.280	1.4	1.7	.170	--	--	--	--	--	--
27...	.200	2.2	2.4	.290	--	--	--	1590	1260	90
27...	.220	3.5	3.7	.330	27	0	.00	--	--	--
27...	--	--	--	--	--	--	--	1570	2340	96
28...	--	--	--	--	--	--	--	285	144	--
28...	.120	1.6	1.7	.220	14	2	.00	--	--	--
28...	--	--	--	--	--	--	--	181	42	--
MAY										
13...	--	--	--	--	--	--	--	945	492	--
13...	.210	1.3	1.5	.230	16	--	--	774	265	97
13...	.210	1.9	2.1	.300	--	--	--	--	--	--
13...	--	--	--	--	--	5	--	--	--	--
13...	.200	3.3	3.5	.560	65	--	--	2680	3260	92
13...	.160	2.7	2.9	.500	--	--	--	--	--	--
13...	.130	2.6	2.7	.460	39	--	--	1370	2620	84
14...	--	--	--	--	--	--	--	460	582	--
14...	--	--	--	--	--	--	--	362	137	89
27...	--	--	--	--	--	--	--	592	484	--

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT							
11...	1305	0	200	<1	0	0	10
NOV							
28...	1225	1	300	<1	0	0	<10
JAN							
22...	1700	1	200	<1	0	2	20
MAR							
27...	1650	1	200	<1	0	2	70

08159165 BIG SANDY CREEK NEAR MCDADE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT						
11...	0	480	.0	0	0	<3
NOV						
28...	0	5400	.0	0	0	4
JAN						
22...	1	310	.2	2	0	20
MAR						
27...	1	380	.1	1	0	8

DATE	TIME	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L)
OCT											
11...	1305	<4.7	.3	<6.9	.4	6.3	.6	6.0	.6	.07	.46
NOV											
28...	1225	<4.1	.5	<6.1	.7	4.7	<.6	4.5	<.6	1.1	.41

DATE	TIME	PCB TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
OCT									
11...	1305	.00	--	.00	.0	.00	.00	.00	.00
NOV									
28...	1225	.00	--	.00	.0	.00	.00	.00	.00
JAN									
22...	1700	.00	.0	.00	.0	.00	.00	.00	.00
MAR									
27...	1650	--	--	.00	--	--	.00	--	.00

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
OCT									
11...	.00	.00	.00	.00	.00	.00	.00	.00	.00
NOV									
28...	.00	.00	.00	.00	.00	.00	.00	.00	.00
JAN									
22...	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAR									
27...	--	--	--	.00	.00	--	--	.00	--

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
OCT									
11...	.00	.00	.00	.00	0	.00	.00	.00	.00
NOV									
28...	.00	.00	.00	.00	0	.00	.00	.00	.00
JAN									
22...	.00	.00	.00	.00	0	.00	.00	.00	.00
MAR									
27...	.00	.00	.00	.00	--	.00	.02	.00	.00

08159165 BIG SANDY CREEK NEAR MCDADE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, WATER (DEG C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM
OCT							
11...	1315	.03	23.5	6	.00	--	--
NOV							
28...	1225	.22	12.5	16	.01	--	--
JAN							
09...	1315	.63	10.5	21	.04	--	--
23...	1330	11	10.5	203	6.0	--	--
MAR							
27...	--	303	--	592	484	--	--
27...	1230	78	--	268	56	--	--
27...	1515	294	--	1590	1260	--	--
27...	1702	552	15.0	1570	2340	77	84
28...	--	187	--	285	144	--	--
28...	1240	85	16.5	181	42	--	--
MAY							
13...	--	193	--	945	492	--	--
13...	1630	127	--	774	265	55	62
13...	1900	451	--	2680	3260	80	81
13...	2130	709	--	1370	2620	74	77
14...	--	469	--	460	582	--	--
14...	1320	140	21.0	362	137	--	--
27...	--	303	--	592	484	--	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM
OCT							
11...	--	--	--	--	--	--	--
NOV							
28...	--	--	--	--	--	--	--
JAN							
09...	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--
MAR							
27...	--	--	--	--	--	--	--
27...	--	--	--	64	72	92	99
27...	--	--	--	90	96	--	100
27...	90	93	95	96	97	99	100
28...	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--
MAY							
13...	--	--	--	--	--	--	--
13...	67	70	90	97	98	99	99
13...	88	88	89	92	93	98	99
13...	81	82	84	84	85	97	99
14...	--	--	--	--	--	--	--
14...	--	--	--	89	95	99	99
27...	--	--	--	--	--	--	--

08159170 BIG SANDY CREEK NEAR ELGIN, TX

LOCATION.--Lat 30°15'54", long 97°19'39", Bastrop County, Hydrologic Unit 12090301, on right bank at downstream side of bridge on State Highway 95, 6.1 mi (9.8 km) south of Elgin, and 10.7 mi (17.2 km) north of Bastrop.

DRAINAGE AREA.--63.8 mi² (165.2 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1979 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 392 ft (119.5 m), from topographic map.

REMARKS.--Water-discharge records fair. No known regulation or diversion. Station is part of hydrologic-research project to study effects of lignite strip mining on local water resources. Station has automatic water-quality sampler. Three recording rain gages are located in the watershed.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,720 ft³/s (48.7 m³/s) May 14, 1980, gage height, 15.78 ft (4.810 m); no flow July 30 to Sept. 6, Sept. 8-29, 1980.

EXTREMES FOR PERIOD JULY TO SEPTEMBER 1979.--Maximum discharge, 256 ft³/s (7.25 m³/s) July 28, gage height, 8.81 ft (2.685 m), no peak above base of 500 ft³/s (14.2 m³/s); minimum, 0.05 ft³/s (0.001 m³/s) Sept. 16, 17.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 28	0215	1,340	37.9	14.51	4.423
May 14	0615	*1,720	48.7	15.78	4.810

Minimum discharge, no flow July 30 to Sept. 6, Sept. 8-29.

DISCHARGE, IN CUBIC FEET PER SECOND, JULY TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1										---	1.2	.18
2										---	.85	.16
3										---	.64	.14
4										---	.47	.13
5										---	.44	.12
6										---	.41	.14
7										---	.33	.16
8										---	.60	.33
9										---	.41	.20
10										---	.33	.15
11										---	.28	.12
12										8.5	.28	.10
13										4.3	.30	.07
14										2.9	.26	.07
15										2.6	.24	.07
16										2.2	.22	.06
17										1.6	.20	.05
18										1.3	.18	.06
19										1.4	.18	.13
20										1.4	.16	.37
21										4.2	.16	.17
22										7.1	.16	.10
23										3.8	.16	.08
24										1.9	.14	.07
25										1.2	.13	.07
26										1.0	.13	.06
27										2.8	.13	.06
28										92	.12	.07
29										9.4	.11	.08
30										3.1	.18	.08
31										2.0	.24	---
TOTAL										---	9.64	3.65
MEAN										---	.31	.12
MAX										---	1.2	.37
MIN										---	.11	.05
CFSM										---	.005	.002
IN.										---	.01	.00
AC-FT										---	19	7.2

WTR YR 1979 TOTAL - MEAN - MAX - MIN - CFSM - IN. - AC-FT -

08159170 BIG SANDY CREEK NEAR ELGIN, TX--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.05	.10	1.8	2.6	6.1	8.5	8.9	2.3	.22	.00	.00
2	.08	.03	.11	1.5	2.5	7.6	7.3	11	2.0	.24	.00	.00
3	.07	.02	.16	1.3	2.4	3.7	6.5	4.9	1.7	.24	.00	.00
4	.25	.02	.16	.88	2.0	2.6	5.5	2.9	1.5	.26	.00	.00
5	.07	.03	.18	.85	1.8	2.1	4.7	2.1	1.3	.24	.00	.00
6	.07	.03	.22	.93	1.7	1.8	3.9	1.5	1.2	.24	.00	.00
7	.06	.04	.20	.74	1.5	1.5	3.8	1.7	1.1	.24	.00	.10
8	.06	.03	.23	.73	1.7	1.4	3.3	2.7	1.1	.23	.00	.00
9	.05	.06	.25	.69	2.4	1.3	2.7	9.2	1.1	.24	.00	.00
10	.06	.06	.26	.77	3.9	1.1	2.4	5.6	1.0	.24	.00	.00
11	.06	.07	.28	.77	2.6	.92	2.4	3.2	1.0	.23	.00	.00
12	.05	.06	.38	.74	2.0	1.2	2.1	8.3	.96	.22	.00	.00
13	.05	.06	.36	.74	1.9	.98	3.9	205	.86	.22	.00	.00
14	.04	.06	.25	.75	2.3	.88	4.4	1000	.71	.22	.00	.00
15	.05	.07	.25	.83	1.9	.80	3.0	184	.66	.22	.00	.00
16	.07	.08	.36	.87	5.1	.75	2.3	142	.53	.21	.00	.00
17	.05	.10	.26	.92	10	.77	1.9	37	.42	.18	.00	.00
18	.06	.13	.20	1.1	6.4	.75	1.7	16	.38	.17	.00	.00
19	.05	.14	.20	1.0	4.5	.76	1.6	11	.35	.16	.00	.00
20	.05	.13	.16	14	3.3	.84	1.4	10	.32	.15	.00	.00
21	.05	.27	.16	13	2.8	.79	1.2	7.8	.33	.15	.00	.00
22	.06	.22	.14	63	2.7	.75	1.1	6.0	.31	.14	.00	.00
23	.06	.14	.33	35	1.9	.77	1.1	4.8	.30	.13	.00	.00
24	.06	.11	.55	11	1.6	.67	1.1	4.1	.28	.12	.00	.00
25	.07	.12	.36	6.5	1.3	.76	13	3.8	.25	.10	.00	.00
26	.08	.13	.18	4.9	1.2	1.0	14	3.3	.22	.08	.00	.00
27	.09	.11	.11	3.8	1.1	216	6.0	3.0	.24	.06	.00	.00
28	.09	.09	.22	3.3	1.5	488	3.4	2.7	.23	.04	.00	.00
29	.07	.08	13	3.1	1.7	22	2.2	2.5	.22	.02	.00	.00
30	.25	.08	6.7	3.0	---	11	1.8	2.3	.24	.00	.00	.11
31	.33	---	2.9	2.9	---	8.8	---	2.3	---	.00	.00	---
TOTAL	2.59	2.62	29.22	181.41	78.3	788.39	118.2	1709.6	23.11	5.21	.00	.21
MEAN	.084	.087	.94	5.85	2.70	25.4	3.94	55.1	.77	.17	.000	.007
MAX	.33	.27	13	63	10	488	14	1000	2.3	.26	.00	.11
MIN	.04	.02	.10	.69	1.1	.67	1.1	1.5	.22	.00	.00	.00
CFSM	.001	.001	.02	.09	.04	.40	.06	.86	.01	.003	.000	.000
IN.	.00	.00	.02	.11	.05	.46	.07	1.00	.01	.00	.00	.00
AC-FT	5.1	5.2	58	360	155	1560	234	3390	46	10	.00	.4
(††)	1.61	.80	3.18	2.75	2.13	3.62	2.27	6.85	.58	.33	.80	2.74

CAL YR 1979 TOTAL - MEAN - MAX - MIN - CFSM - IN - AC-FT - †† -
WTR YR 1980 TOTAL 2938.86 MEAN 8.03 MAX 1000 MIN .00 CFSM .13 IN 1.71 AC-FT 5830 †† 27.66

†† Weighted-mean rainfall, in inches, based on three rain gages.

08159170 BIG SANDY CREEK NEAR ELGIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: May 1979 to current year. Radiochemical analyses: May to September 1979.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
OCT										
11...	1110	.30	416	6.9	16.0	20	7.6	2.9	30	2.4
NOV										
28...	1100	1.3	342	6.9	11.0	70	7.7	4.5	40	3.7
JAN										
09...	1100	.66	677	7.2	9.5	20	19	8.4	74	2.5
09...	1110	.69	--	--	8.5	--	--	--	--	--
22...	1530	108	431	7.3	11.5	120	220	9.3	85	3.8
23...	1210	29	--	--	9.5	--	--	--	--	--
MAR										
27...	--	216	--	--	--	--	--	--	--	--
27...	1456	163	187	6.9	15.0	200	370	10.9	105	5.2
27...	1510	178	--	--	15.0	--	--	--	--	--
28...	--	488	--	--	--	--	--	--	--	--
28...	1105	271	139	7.0	15.5	200	300	9.5	95	4.6
28...	1130	265	--	--	15.5	--	--	--	--	--
MAY										
12...	--	8.3	--	--	--	--	--	--	--	--
12...	2200	27	205	--	--	--	--	--	--	6.6
12...	2300	38	231	8.3	--	200	530	--	--	--
13...	--	205	--	--	--	--	--	--	--	--
13...	0015	43	218	--	--	--	--	--	--	--
13...	0200	51	143	--	--	--	--	--	--	5.1
13...	0300	54	135	7.4	--	--	--	--	--	--
14...	--	1000	--	--	--	--	--	--	--	--
14...	1400	1000	--	--	21.5	--	--	--	--	--

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
OCT										
11...	2600	120	210	110	32	33	7.7	29	1.2	6.5
NOV										
28...	870	96	220	88	33	24	6.9	30	1.4	7.7
JAN										
09...	1800	270	390	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	110	75	30	8.4	32	1.3	6.1
23...	--	--	--	--	--	--	--	--	--	--
MAR										
27...	--	--	--	--	--	--	--	--	--	--
27...	27000	11000	62000	55	31	15	4.3	17	1.0	4.2
27...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	28000	26000	100000	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
MAY										
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	67	18	19	4.8	18	1.0	5.2
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	49	20	14	3.5	12	.7	5.3
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--

08159170 BIG SANDY CREEK NEAR ELGIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)
OCT										
11...	100	0	25	59	.3	24	235	.00	.020	.01
NOV										
28...	68	0	20	56	.2	30	210	.01	.010	.02
JAN										
09...	--	--	--	--	--	--	--	.00	.020	.02
09...	--	--	--	--	--	--	--	--	--	--
22...	42	0	76	51	.2	11	236	.15	.010	.16
23...	--	--	--	--	--	--	--	--	--	--
MAR										
27...	--	--	--	--	--	--	--	--	--	--
27...	30	0	30	26	.1	9.1	121	.19	.010	.20
27...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	.61	.040	.65
28...	--	--	--	--	--	--	--	--	--	--
MAY										
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	.21	.020	.23
12...	60	0	27	27	.2	12	143	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	.15	.020	.17
13...	36	0	16	26	.1	11	106	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--

DATE	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	PHENOLS (UG/L)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT										
11...	.000	.66	.66	.020	5.8	2	.00	10	.01	--
NOV										
28...	.010	.12	.13	.120	8.1	3	.00	25	.09	--
JAN										
09...	.030	.97	1.0	.070	5.9	0	.10	--	--	--
09...	--	--	--	--	--	--	--	22	.04	--
22...	.040	.61	.65	.110	16	3	--	--	--	--
23...	--	--	--	--	--	--	--	258	20	--
MAR										
27...	--	--	--	--	--	--	--	841	490	--
27...	.100	2.5	2.6	.180	28	2	.00	--	--	--
27...	--	--	--	--	--	--	--	1280	615	85
28...	--	--	--	--	--	--	--	1270	1670	--
28...	.110	4.7	4.8	.230	15	2	.00	--	--	--
28...	--	--	--	--	--	--	--	1240	887	--
MAY										
12...	--	--	--	--	--	--	--	373	8.4	--
12...	.150	2.6	2.7	.240	42	--	--	2100	153	95
12...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	1050	581	--
13...	--	--	--	--	--	--	.00	851	99	87
13...	.110	2.2	2.3	.200	34	--	--	--	--	--
13...	--	--	--	--	--	--	--	754	110	74
14...	--	--	--	--	--	--	--	614	1660	--
14...	--	--	--	--	--	--	--	438	1180	67

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT							
11...	1110	0	200	<1	0	0	110
NOV							
28...	1100	1	100	<1	0	0	1200
JAN							
22...	1530	1	100	2	0	1	280
MAR							
27...	1456	1	60	1	0	4	560
MAY							
12...	2200	1	90	<1	0	27	190
13...	0200	1	60	<1	0	5	360

08159170 BIG SANDY CREEK NEAR ELGIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 11...	0	1200	.0	0	0	3
NOV 28...	0	650	.0	0	0	<3
JAN 22...	1	160	.1	1	0	10
MAR 27...	2	190	.3	0	0	20
MAY 12...	5	7	.0	1	0	140
13...	3	6	.0	0	0	8

DATE	TIME	GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L)	URANIUM DISSOLVED, EXTRACTION (UG/L)
OCT 11...	1110	<2.0	<.3	<2.9	<.5	5.0	<.5	5.2	<.5	.65	.21
NOV 28...	1100	<1.9	1.6	<2.8	2.4	7.3	2.7	6.9	2.8	.03	.19

DATE	TIME	PCB TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
OCT 11...	1110	.00	--	.00	.0	.00	.00	.00	.00
NOV 28...	1100	.00	--	.00	.0	.00	.00	.00	.00
JAN 22...	1530	.00	.0	.00	.0	.00	.00	.00	.00
MAR 27...	1456	--	--	.00	--	--	.00	--	.00
MAY 13...	0015	.00	.0	.00	.0	.00	.00	.00	.00

DATE	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)
OCT 11...	.00	.00	.00	.00	.00	.00	.00	.00	.00
NOV 28...	.00	.00	.00	.00	.00	.00	.00	.00	.00
JAN 22...	.00	.00	.00	.00	.00	.00	.01	.00	.00
MAR 27...	--	--	--	.00	.00	--	--	.00	--
MAY 13...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
OCT 11...	.00	.00	.00	.00	0	.00	.00	.00	.00
NOV 28...	.00	.00	.00	.00	0	.00	.00	.00	.00
JAN 22...	.00	.00	.00	.00	0	.00	.01	.01	.00
MAR 27...	.00	.00	.00	.00	--	.00	.01	.00	.00
MAY 13...	.00	.00	.00	.00	0	.00	.08	.02	<.01

08159170 BIG SANDY CREEK NEAR ELGIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, WATER (DEG C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM
OCT							
11...	1110	.30	16.0	10	.01	--	--
NOV							
28...	1100	1.3	11.0	25	.09	--	--
JAN							
09...	1110	.69	8.5	22	.04	--	--
23...	1210	29	9.5	258	20	--	--
MAR							
27...	--	216	--	841	490	--	--
27...	1510	178	15.0	1280	615	63	65
28...	--	488	--	1270	1670	--	--
28...	1130	265	15.5	1240	887	--	--
MAY							
12...	--	8.3	--	373	8.4	--	--
12...	2200	27	--	2100	153	41	42
13...	--	205	--	1050	581	--	--
13...	0015	43	--	851	99	61	73
13...	0300	54	--	754	110	--	--
14...	--	1000	--	614	1660	--	--
14...	1400	1000	21.5	438	1180	--	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM
OCT							
11...	--	--	--	--	--	--	--
NOV							
28...	--	--	--	--	--	--	--
JAN							
09...	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--
MAR							
27...	--	--	--	--	--	--	--
27...	69	75	81	85	90	95	99
28...	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--
MAY							
12...	--	--	--	--	--	--	--
12...	43	52	65	95	96	98	99
13...	--	--	--	--	--	--	--
13...	76	83	85	87	92	97	99
13...	--	--	--	74	78	83	85
14...	--	--	--	--	--	--	--
14...	--	--	--	67	74	86	99

08159150 [illegible] CREEK NEAR MCDADE, TX

LOCATION.--Lat 30°14'29", long 97°17'03", Bastrop County, Hydrologic Unit 12090301, at upstream side of culvert on unnamed gravel road in Camp Swift, 4 mi (6 km) southwest of McDade, and [illegible] mi ([illegible] km) north of Bastrop.

DRAINAGE AREA.--0.53 mi² (1.37 km²).

PERIOD OF RECORD.--Chemical, biochemical, pesticide, and sediment analyses: January to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXY-GEN DEMAND, BIOCHEM-ICAL 5 DAY (MG/L)
JAN										
22...	0715	13	38	7.2	--	400	73	--	--	3.6
22...	0738	15	39	7.3	--	200	260	--	--	6.0
22...	1500	1.3	75	7.7	11.5	300	33	9.7	90	1.8
MAR										
27...	1000	16	--	--	--	300	370	--	--	3.0
27...	1022	28	45	--	--	230	400	--	--	4.8
27...	1600	12	--	--	15.0	--	--	--	--	--
27...	1806	6.9	--	--	15.0	--	--	--	--	--
27...	1810	6.4	81	7.4	15.0	300	130	10.2	90	2.0
MAY										
13...	1530	9.9	36	--	--	300	230	--	--	--
13...	1545	27	37	--	--	400	300	--	--	6.0
13...	1600	56	37	7.1	--	--	--	--	--	--
13...	1615	31	39	--	--	--	--	--	--	6.2
13...	1630	46	43	--	--	100	90	--	--	10.9
14...	1214	1.5	--	--	--	--	--	--	--	--

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
JAN										
22...	--	--	--	30	0	9.2	1.4	4.8	.3	3.6
22...	--	--	--	17	0	6.6	1.2	4.7	.4	4.0
22...	--	--	--	37	0	8.3	2.3	3.7	.3	5.0
MAR										
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	4500	2600	17000	--	--	--	--	--	--	--
MAY										
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	16	0	3.9	1.5	2.5	.3	5.6
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--

DATE	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)
JAN										
22...	26	0	14	2.2	.2	13	60	.12	.010	.13
22...	26	0	2.1	2.2	.3	8.0	50	.15	.010	.15
22...	39	0	6.0	4.3	.1	8.3	90	.09	.010	.09
MAR										
27...	--	--	--	2.8	--	--	--	.15	.010	.13
27...	--	--	--	3.3	--	--	--	.13	.010	.16
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	2.5	--	--	--	.06	.010	.08
MAY										
13...	--	--	--	--	--	--	--	.07	.010	.08
13...	--	--	--	--	--	--	--	.06	.020	.10
13...	20	0	2.9	2.3	.0	5.9	30	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	.06	.020	.07
14...	--	--	--	--	--	--	--	--	--	--

08159180 DOGWOOD CREEK NEAR MCDADE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	PHENOLS (UG/L)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
JAN										
22...	.040	.87	.91	.070	19	2	.30	394	21	99
22...	.020	.73	.75	.060	19	1	--	--	--	--
22...	.000	.43	.43	.040	15	0	.00	256	1.0	99
MAR										
27...	.060	1.5	1.6	.090	16	--	.00	661	32	99
27...	.080	1.6	1.7	.070	15	0	.00	446	31	98
27...	--	--	--	--	--	--	--	161	3.2	--
27...	--	--	--	--	--	--	--	109	1.6	--
27...	.060	2.5	2.6	.070	16	4	.00	--	--	--
MAY										
13...	.070	1.3	1.4	.090	27	--	--	116	3.0	89
13...	.060	1.6	1.7	.090	31	--	--	701	51	93
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	7	--	--	--	--
13...	.070	1.3	1.4	.060	20	--	--	63	7.5	98
14...	--	--	--	--	--	--	--	54	.22	--

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
JAN							
22...	0715	1	50	<1	0	5	830
22...	0730	3	50	<1	0	3	3900
22...	1500	0	60	<1	0	2	2000
MAY							
13...	1600	2	40	<1	0	21	240

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN						
22...	0	20	.1	0	0	10
22...	0	3	2.5	0	0	9
22...	0	3	.1	0	0	7
MAY						
13...	5	0	.0	0	0	70

DATE	TIME	PCB TOTAL (UG/L)	POLY-CHLOR. NAPH-THALENES, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JAN									
22...	1500	.00	.0	.00	.0	.00	.00	.00	.00
MAY									
13...	1600	.00	.0	.00	.0	.00	.00	.00	.00

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
JAN									
22...	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAY									
13...	.00	.00	.00	.00	.00	.00	.00	.00	.00

08159180 DOGWOOD CREEK NEAR MCDADE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN									
22...	.00	.00	.00	.00	0	.00	.00	.00	.00
MAR									
27...	.00	.00	.00	.00	0	.00	.00	.00	.00

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, WATER (DEG C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM
JAN							
22...	0715	13	--	504	21	92	95
22...	1300	1.3	11.5	236	1.0	--	--
MAR							
27...	1000	18	--	661	32	82	89
27...	1022	28	--	404	31	--	--
27...	1600	12	15.0	141	5.2	--	--
27...	1806	6.9	13.0	109	1.4	--	--
MAY							
13...	1530	9.9	--	116	3.0	--	--
13...	1545	37	--	760	51	--	--
13...	1630	44	--	63	7.5	--	--
14...	1214	1.5	--	56	.22	--	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM
JAN							
22...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	100
22...	--	--	--	[illegible]	[illegible]	[illegible]	100
MAR							
27...	[illegible]	[illegible]	[illegible]	[illegible]	100	--	--
27...	--	--	--	[illegible]	[illegible]	[illegible]	100
27...	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--
MAY							
13...	--	--	--	[illegible]	[illegible]	[illegible]	100
13...	--	--	--	[illegible]	[illegible]	[illegible]	100
13...	--	--	--	[illegible]	[illegible]	[illegible]	[illegible]
14...	--	--	--	--	--	--	--

08159185 DOGWOOD CREEK AT HIGHWAY 95 NEAR MCDADE, TX

LOCATION.--Lat 30°13'49", long 97°19'03", Bastrop County, Hydrologic Unit 12090301, on right upstream end of bridge on State Highway 95, 3.7 mi (9.2 km) southwest of McDade, and 7.5 mi (12.1 km) south of Elgin.

DRAINAGE AREA.--5.03 mi² (13.03 km²).

PERIOD OF RECORD.--Chemical, biochemical, pesticide, and sediment analyses: March to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
MAR 27...	1543	48	72	6.9	15.0	200	130	11.3	100	4.1
MAY 13...	1220	21	222	7.5	20.5	300	3.6	--	--	2.6

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
MAR 27...	29000	4100	37000	27	6	7.2	2.3	4.0	.3
MAY 13...	46000	760	8000	72	56	18	6.5	13	.7

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)
MAR 27...	6.1	20	0	14	6.1	.1	9.6	[illegible]	.20
MAY 13...	5.3	22	0	62	13	.2	13	140	.06

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAR 27...	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	[illegible]	[illegible]
MAY 13...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DATE	TIME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAR 27...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAY 13...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAR 27...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAY 13...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

08159185 DOGWOOD CREEK AT HIGHWAY 95 NEAR MCDADE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ALDRIN, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
MAR								
27...	1543	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
MAR							
27...	.00	.00	.00	.00	.01	.00	.00

08159200 COLORADO RIVER AT BASTROP, TX

LOCATION.--Lat 30°06'20", long 97°19'08", Bastrop County, Hydrologic Unit 12090301, on left bank in city park at Bastrop, 400 ft (122 m) upstream from bridge on State Highway 71, 0.3 mi (0.5 km) upstream from Gills Creek, 1.1 mi (1.8 km) downstream from Piney Creek, and at mile 236.8 (381.0 km).

DRAINAGE AREA.--39,400 mi² (102,000 km²), approximately, of which 12,880 mi² (33,360 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 307.38 ft (93.689 m) National Geodetic Vertical Datum of 1929. Prior to May 10, 1960, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records good. There are many diversions above stations for irrigation and municipal supply. Regulation is the same as that for Colorado River at Austin (station 08158000). During the water year, 4,260 acre-ft (5.25 hm³) was diverted above this station by pumping into Decker Lake by the city of Austin. During the year, the Lower Colorado River Authority diverted 7,800 acre-ft (9.62 hm³) above this station into Lake Bastrop. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--20 years, 2,137 ft³/s (60.52 m³/s), 1,548,000 acre-ft/yr (1.91 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 79,600 ft³/s (2,250 m³/s) Oct. 29, 1960, gage height, 34.45 ft (10.500 m); minimum daily, 75 ft³/s (2.12 m³/s) Apr. 1, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1845, 60.3 ft (18.38 m) July 7 or 8, 1869. Flood of June 16, 1935, reached a stage of 57.0 ft (17.37 m), and flood of Dec. 4, 1913, reached a stage of 53.3 ft (16.25 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,400 ft³/s (436 m³/s) May 14 at 1500 hours, gage height, 13.76 ft (4.188 m); minimum daily, 130 ft³/s (3.68 m³/s) Nov. 14, 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1120	282	154	252	472	223	970	2370	2480	2340	1860	2790
2	1130	216	157	237	297	238	815	2620	2480	2530	1920	2650
3	997	172	168	209	256	227	701	2170	2440	2530	1800	2640
4	865	166	359	212	237	363	597	1980	2510	2390	2000	2440
5	928	170	429	210	223	487	573	2040	2530	2310	2230	2610
6	726	163	263	204	211	231	559	2040	2530	2500	2050	2290
7	361	166	244	196	212	211	563	2120	2530	2310	2030	2390
8	281	158	221	193	215	199	543	2310	2530	2520	2080	2470
9	269	153	209	192	327	191	789	3250	2600	2370	1810	1490
10	226	144	209	183	427	190	1130	1460	2440	2250	1600	1670
11	222	135	202	195	309	186	1150	1700	2530	2260	976	[illegible]
12	209	135	225	193	280	190	952	1760	[illegible]	[illegible]	[illegible]	[illegible]
13	216	132	225	203	261	180	1670	4440	[illegible]	[illegible]	[illegible]	[illegible]
14	211	130	253	[illegible]	[illegible]	161	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	199	130	[illegible]	193	223	176	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	202	[illegible]	[illegible]	198	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	203	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	---	[illegible]	[illegible]	---	[illegible]	---	[illegible]	---	[illegible]	[illegible]	---
TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MEAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAX	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MIN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AC-FT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CAL YR 1979 [illegible]

WTR YR 1980 [illegible]

08159200 COLORADO RIVER AT BASTROP, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1967 to September 1973, October 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)
OCT 15...	1300	195	700	7.7	23.0	8.8	104	--	240	42
DEC 17...	1115	204	675	7.7	6.0	12.4	98	.6	240	47
FEB 21...	1330	218	680	7.9	17.0	14.0	147	1.8	250	78
APR 11...	1045	917	541	7.5	20.5	7.9	89	.2	210	44
JUN 13...	1150	2920	519	7.6	26.0	7.6	94	.3	200	39
AUG 15...	1400	2670	528	7.8	28.5	7.0	90	1.2	190	34

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT 15...	61	21	40	1.1	4.6	240	0	47	55	.3
DEC 17...	63	21	43	1.2	5.7	240	0	51	55	.6
FEB 21...	69	19	50	1.4	5.1	210	0	70	65	.9
APR 11...	52	19	28	.8	3.6	200	0	39	45	.4
JUN 13...	45	22	26	.8	3.3	200	0	31	45	.3
AUG 15...	43	20	26	.8	3.2	190	0	31	44	.3

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
OCT 15...	5.7	353	1.6	.10	1.7	.01	.38	.38	.440
DEC 17...	8.6	386	2.9	.10	3.1	.70	.30	1.0	1.200
FEB 21...	5.7	388	5.0	.28	5.3	.53	.67	1.1	1.300
APR 11...	.2	330	.62	.06	.68	.13	1.2	1.3	.300
JUN 13...	8.0	277	.27	.01	.28	.04	.46	.50	.400
AUG 15...	8.0	270	.32	.01	.33	.00	.38	.38	.080

08160800 REDGATE CREEK NEAR COLUMBUS, TX

LOCATION.--Lat 29°47'56", long 96°31'55", Colorado County, Hydrologic Unit 12090301, on left bank 68 ft (21 m) downstream from bridge on Farm Road 109, 1.8 mi (2.9 km) upstream from Cummins Creek, and 7.0 mi (11.3 km) north of Columbus.

DRAINAGE AREA.--17.3 mi² (44.8 km²).

PERIOD OF RECORD.--April 1962 to current year.

REVISED RECORDS.--WSP 2122: Drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 200.82 ft (61.210 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1975, at datum 10.00 ft (3.048 m) higher.

REMARKS.--Records fair. No known diversion above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--18 years, 6.09 ft³/s (0.172 m³/s), 4.78 in/yr (121 mm/yr), 4,410 acre-ft/yr (5.44 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,360 ft³/s (152 m³/s) May 22, 1970, gage height, 27.19 ft (8.288 m), from rating curve extended above 2,170 ft³/s (61.5 m³/s) on basis of slope-area measurement of peak flow of Jan. 22, 1965; no flow for many days.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1860, about 33.4 ft 10.18 m) in late June or early July 1940, from information by State Department of Highways and Public Transporation and local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 15	1630	1,030	29.2	16.55	5.044
May 19	0315	*1,710	48.4	18.44	5.621

Minimum discharge, 0.36 ft³/s (0.010 m³/s) Aug. 24, 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	1.0	.99	1.1	1.5	3.6	1.6	1.8	1.2	.59	.63	.42
2	1.0	.97	1.0	1.1	1.9	2.0	1.6	1.4	1.2	.59	.63	.42
3	1.0	.95	1.0	13	1.9	2.0	1.5	1.2	1.1	.55	.59	.45
4	1.0	.87	1.0	1.4	1.8	2.3	1.4	1.2	1.1	.55	.59	.48
5	.95	.90	1.1	1.3	2.1	2.1	1.3	1.1	1.1	.52	.55	.55
6	.95	.92	1.1	1.3	1.9	1.9	1.4	1.1	1.1	.52	.55	.92
7	.95	.92	1.0	1.2	1.8	2.0	1.5	1.4	1.1	.48	.55	1.2
8	.92	.88	1.0	1.1	90	2.1	1.6	1.4	1.1	.48	.52	1.3
9	.92	1.1	.87	1.1	17	2.0	1.4	1.2	2.9	.48	.52	.87
10	.92	.92	.99	1.1	5.0	2.0	1.3	1.2	1.6	.48	.48	.55
11	.92	.92	1.1	1.2	3.3	2.0	1.4	1.2	1.2	.52	.48	.55
12	.94	.92	4.3	.99	2.8	1.9	1.4	1.2	1.1	.52	.45	.52
13	.92	.92	1.8	1.1	2.6	1.8	2.3	1.3	1.0	.45	.45	.52
14	.91	.92	1.3	1.1	2.4	1.7	1.5	2.6	1.0	.45	.45	.48
15	.89	.92	1.2	1.1	2.6	1.8	1.4	113	.87	.45	.44	.52
16	.94	.92	1.2	1.1	3.8	2.3	1.3	16	.94	.42	.48	.55
17	.87	.94	1.0	1.4	2.9	2.0	1.3	6.2	.92	.45	.45	.52
18	.87	1.1	1.0	1.6	2.7	1.8	1.3	4.6	.92	.45	.39	.52
19	.87	1.0	1.1	1.1	2.6	1.9	1.3	885	.87	.42	.39	.43
20	.87	1.0	1.1	11	2.4	2.3	1.3	7.7	.87	.42	.39	.39
21	[illegible]	1.0	1.1	57	2.3	1.9	1.2	6.1	.87	.45	.39	.39
22	.87	[illegible]	[illegible]	20	[illegible]	1.7	[illegible]	[illegible]	.87	.45	.39	.39
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.45	.39	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.45	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.42	[illegible]	[illegible]
26	.87	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.42	.43	.52
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.42	.43	1.1
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.52	.43	1.9
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.2
31	[illegible]	---	[illegible]	[illegible]	---	[illegible]	---	[illegible]	---	[illegible]	[illegible]	---
TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MEAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAX	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MIN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CFSM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
IN.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AC-FT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CAL YR 1979 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] CFSM [illegible] IN [illegible] AC-FT [illegible]
WTR YR 1980 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] CFSM [illegible] IN [illegible] AC-FT [illegible]

08161000 COLORADO RIVER AT COLUMBUS, TX

LOCATION.--Lat 29°42'22", long 96°32'12", Colorado County, Hydrologic Unit 12090302, near right bank at downstream side of pier of bridge on U.S. Highway 90 at eastern edge of Columbus, 340 ft (104 m) downstream from Texas and New Orleans Railroad Co. bridge, 2.6 mi (4.2 km) downstream from Cummins Creek, and at mile 135.1 (217.4 km).

DRAINAGE AREA.--41,070 mi² (106,370 km²), approximately, of which 12,880 mi² (33,360 km²) probably is noncontributing; 41,170 mi² (106,630 km²), approximately, at site "near Eagle Lake".

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1903 to December 1911 (gage heights only), May 1916 to current year. Discharge records for 1902-11, published in WSP 84, 99, 132, 174, 210, 288, and 308, have been found to be unreliable and should not be used. Records collected at site 23 mi (37 km) downstream October 1930 to May 1939, published as "near Eagle Lake". Gage-height records collected in this vicinity since 1903 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1342: Drainage area. WSP 1562: 1920-21(M), 1922. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 155.52 ft (47.402 m) National Geodetic Vertical Datum of 1929. Prior to May 1, 1919, various nonrecording gages at sites in the immediate vicinity at datum 3.00-foot (0.914 m) lower. May 1, 1919, to Nov. 23, 1930, water-stage recorder at site about 300 ft (91 m) downstream at datum 3.00-foot (0.914 m) lower. Sept. 17, 1930, to June 12, 1939 (Oct. 1, 1930, to May 31, 1939, used herein), water-stage recorder at site 23 mi (37 km) downstream at different datum. May 17 to Nov. 14, 1939, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records good. At times, low-flow releases from Lake Travis (station 08154500) are made for generation of electric power and (or) to fulfill downstream water contracts. The Lower Colorado River Authority reported that 14,587 acre-ft (18.0 hm³) was diverted from the river to Cedar Creek Reservoir during the current year. This reservoir is located 10 mi (16 km) north of the river and 3.5 mi (5.6 km) west of Fayetteville. Flow is also affected at times by discharge from flood-detention pools of 20 floodwater-retarding structures with a combined detention capacity of 25,570 acre-ft (31.5 hm³). These structures control runoff from 73.1 mi² (189.3 km²) in the Cummins Creek watershed. Many other diversions above station for irrigation and municipal supply.

AVERAGE DISCHARGE.--20 years (water years 1917-36) unregulated, 3,809 ft³/s (107.9 m³/s), 2,760,000 acre-ft/yr (3.40 km³/yr); 44 years (water years 1937-80) regulated, 2,931 ft³/s (83.01 m³/s), 2,124,000 acre-ft/yr (2.62 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 190,000 ft³/s (5,380 m³/s) June 18, 1935, gage height, 38.5 ft (11.73 m), present site and datum, computed on basis of records for station near Eagle Lake; minimum, 93 ft³/s (2.63 m³/s) Sept. 1, 1918.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1852, 41.6 ft (12.68 m), present datum, in July 1869 and Dec. 6, 1913, from information by local resident. River divided each time and left Columbus on an island.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,800 ft³/s (419 m³/s) May 16 at 0200 hours, gage height, 12.37 ft (3.770 m); minimum daily, 231 ft³/s (6.54 m³/s) Nov. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1130	393	337	703	2310	429	1300	3040	2640	2600	1560	2600
2	1120	371	345	667	1480	597	1080	2990	2410	[illegible]	1740	2730
3	1100	366	330	649	893	361	1070	2270	2390	[illegible]	1630	2640
4	1100	436	320	446	700	480	961	2190	2360	[illegible]	1670	2640
5	999	436	312	613	611	444	832	1860	2380	2390	1610	2480
6	890	613	312	378	348	612	766	1750	2600	2320	1760	2390
7	805	383	442	341	488	500	726	[illegible]	2610	[illegible]	[illegible]	[illegible]
8	750	377	373	323	611	486	699	[illegible]	[illegible]	2370	[illegible]	[illegible]
9	705	371	447	309	887	429	677	1980	[illegible]	[illegible]	1820	[illegible]
10	661	336	619	301	890	409	657	2770	2730	2450	1840	2300
11	678	[illegible]	[illegible]	[illegible]	815	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	---	[illegible]	[illegible]	---	[illegible]	---	[illegible]	---	[illegible]	[illegible]	---
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]
[illegible]

08161000 COLORADO RIVER AT COLUMBUS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1971. Chemical and biochemical analyses: February 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)
JAN										
09...	1330	295	620	8.0	12.0	10.2	94	.8	250	27
MAR										
13...	1000	318	680	8.5	19.0	10.1	107	--	260	55
MAY										
15...	1505	9200	424	8.0	23.0	9.0	105	2.8	160	40
JUL										
17...	1030	2220	515	8.4	30.0	7.0	91	1.7	200	34
SEP										
11...	1510	1770	500	8.3	28.0	8.8	111	.4	190	23

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
JAN										
09...	73	16	36	1.0	4.3	270	0	47	47	.4
MAR										
13...	78	17	50	1.3	4.3	250	3	67	62	.6
MAY										
15...	46	11	23	.8	4.0	160	0	47	35	.4
JUL										
17...	46	21	28	.9	4.1	200	2	31	42	.5
SEP										
11...	42	20	25	.8	3.6	200	0	31	45	.3

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)
JAN									
09...	8.5	365	--	.06	--	.06	--	--	.310
MAR									
13...	3.3	408	.20	.02	.22	.04	.30	.34	.410
MAY									
15...	9.8	243	.84	.04	.88	.07	2.0	2.1	.780
JUL									
17...	7.3	281	.21	.00	.21	.00	1.1	1.1	.200
SEP									
11...	8.8	276	.28	.00	.28	.00	.40	.40	.200

08162000 COLORADO RIVER AT WHARTON, TX
(National stream-quality accounting and radiochemical networks)

LOCATION.--Lat 29°18'32", long 96°06'13", Wharton County, Hydrologic Unit 12090302, near left bank at downstream side of downstream bridge on U.S. Highway 59 in Wharton, 1,100 ft (335 m) downstream from Texas and New Orleans Railroad Co. bridge, 12 mi (19 km) upstream from Jones Creek, and at mile 66.6 (107.2 km).

DRAINAGE AREA.--41,380 mi² (107,170 km²), approximately, of which 12,880 mi² (33.360 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1916 to August 1918 (intermittent periods), March 1919 to September 1925, July and August 1938 (flood discharge measurements only), October 1938 to current year. June to November 1901 and May to September 1902, daily records published in U.S. Department of Agriculture, Office of Experiment Stations, Bulletin Nos. 119 and 133. Gage-height records collected in this vicinity since 1935 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 878: 1938(M). WSP 1342: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 62.42 ft (19.026 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1938, various types of recording and nonrecording gages 800 ft (244 m) upstream at different datum. Oct. 1, 1938, to June 1, 1966, nonrecording gage 100 ft (30 m) upstream at datum 3.00-foot (0.914 m) higher. June 1, 1966, to Sept. 30, 1975, water-stage recorder at present site at datum 3.00-foot (0.914 m) higher.

REMARKS.--Water-discharge records good. Many diversions above station for irrigation, municipal supply, cooling water for thermal-electric powerplant, and oilfield operations. For statement regarding upstream regulation, see station 08161000. Corps of Engineers gage-height telemeter at station.

AVERAGE DISCHARGE.--5 years (water years 1920-25) unregulated, 3,680 ft³/s (104.2 m³/s), 2,666,000 acre-ft/yr (3.29 km³/yr); 42 years (water years 1939-80) regulated, 2,705 ft³/s (76.61 m³/s), 1,960,000 acre-ft/yr (2.42 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 100,000 ft³/s (2,830 m³/s) July 3, 1940, gage height, 38.99 ft (11.884 m); no flow Aug. 6, 1925 (result of pumping).
Flood of July 30, 1938, reached a stage of 40.4 ft (12.31 m), present datum, observed by Geological Survey engineers, discharge, 145,000 ft³/s (4,110 m³/s).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1869, 41.9 ft (12.77 m) Dec. 8, 1913, present datum, from information by local residents; below Wharton floodwater combined with that of the Brazos River. Flood of about July 12, 1869, reached about same height. Flood of June 20, 1935, reached a stage of 41.2 ft (12.56 m), present datum, furnished by National Weather Service, discharge, 159,000 ft³/s (4,500 m³/s) from rating curve defined by current-meter measurements below 145,000 ft³/s (4,110 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,500 ft³/s (382 m³/s) May 16, gage height, 13.05 ft (3.978 m); minimum daily, 284 ft³/s (8.04 m³/s) Aug. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1090	373	393	931	1260	512	2090	1300	1630	1300	982	1340
2	1070	507	392	714	2330	510	1640	1400	1530	1610	931	1500
3	1110	480	382	744	1960	396	1380	1740	1510	1390	1040	1670
4	1070	480	392	643	1270	652	1310	1830	1490	1380	933	1780
5	1030	509	375	652	963	601	1190	1890	1430	1390	925	1670
6	957	520	364	546	800	534	970	1310	1460	1410	832	1640
7	883	498	367	493	711	535	793	1310	1510	1440	[illegible]	1670
8	832	484	366	470	683	536	743	1370	1530	1360	1090	2180
9	860	470	494	448	866	601	673	1470	1560	1380	1130	2210
10	711	456	516	460	1440	611	611	1540	1620	1330	1830	2290
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	---	[illegible]	[illegible]	---	[illegible]	---	[illegible]	---	[illegible]	[illegible]	---
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

08162000 COLORADO RIVER AT WHARTON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: April 1944 to current year. Chemical and biochemical analyses: January 1968 to current year. Pesticide analyses: February 1968 to current year. Sediment analyses: October 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1944 to current year.
WATER TEMPERATURES: October 1945 to September 1948, March 1950 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 904 micromhos Oct. 29, 1963; minimum daily, 146 micromhos Sept. 27, 1957.
WATER TEMPERATURES: Maximum daily, 35.0°C July 26, 1954; minimum daily, 2.0°C Dec. 23, 1963, Jan. 14, 1964.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 752 micromhos Mar. 19; minimum daily, 210 micromhos Jan. 21.
WATER TEMPERATURES: Maximum daily, 31.0°C July 3; minimum daily, 7.0°C Dec. 18, Feb. 1, Mar. 3.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 30...	0845	479	700	7.8	24.5	5	2.7	7.2	86	.8	30	26
NOV 30...	0920	372	700	8.0	7.5	5	.30	11.3	93	.2	42	K6
DEC 18...	0915	465	640	7.9	7.0	10	4.6	12.4	101	1.4	66	K6
JAN 10...	0825	438	620	8.3	12.0	10	2.8	9.0	83	.9	K12	K12
FEB 12...	1630	1080	450	8.2	10.0	30	57	10.6	92	2.3	650	300
MAR 12...	1410	516	670	8.5	23.0	10	8.5	9.2	107	.9	330	20
APR 16...	0945	944	620	8.4	18.0	0	31	9.5	98	.7	120	80
MAY 15...	1015	1190	479	8.3	24.0	0	96	7.9	93	2.0	140	88
JUN 05...	0900	1310	540	8.5	28.0	5	36	6.6	84	.8	140	28
JUL 16...	1440	1510	520	8.6	31.0	10	40	6.4	86	2.3	60	33
AUG 03...	1545	938	500	8.5	29.5	0	25	7.2	94	3.2	40	60
SEP 11...	1000	2210	510	8.4	27.0	5	78	7.3	91	1.3	72	72

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 30...	260	35	73	20	37	1.0	4.0	280	0	62	53
NOV 30...	270	25	79	18	41	1.1	3.9	300	0	66	51
DEC 18...	240	18	71	15	38	1.1	4.4	270	0	61	49
JAN 10...	240	20	70	15	37	1.0	4.4	260	0	67	49
FEB 12...	160	23	46	10	24	.8	3.4	160	0	24	30
MAR 12...	250	40	73	16	40	1.1	3.8	250	2	53	52
APR 16...	220	34	62	17	34	1.0	4.4	230	0	48	51
MAY 15...	180	43	57	10	25	.8	3.7	170	3	30	37
JUN 05...	200	44	58	18	33	.8	[illegible]	210	6	35	43
JUL 16...	200	[illegible]	48	21	27	.8	[illegible]	200	3	33	43
AUG 03...	270	38	67	22	29	.8	[illegible]	260	4	32	48
SEP 11...	190	38	43	19	24	.8	3.2	190	6	30	47

08162000 COLORADO RIVER AT WHARTON, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 30...	.4	8.6	380	376	3	2	.03	.06	.010	.000	.63
NOV 30...	.3	8.0	404	393	5	7	.26	.10	.020	.050	.61
DEC 18...	.4	9.2	372	363	1	0	.98	.44	.110	.040	.72
JAN 10...	.4	9.8	359	366	13	13	1.0	.81	.030	.030	.45
FEB 12...	.2	10	235	233	90	21	.05	.31	.160	.060	--
MAR 12...	.4	1.6	375	366	8	8	.03	.04	.000	.020	.71
APR 16...	.5	.3	355	335	60	5	1.1	1.1	.100	.000	.50
MAY 15...	.3	10	270	266	210	26	.83	.88	.030	.030	1.7
JUN 05...	.3	10	292	288	95	25	.00	.62	.000	.030	--
JUL 16...	.5	7.8	294	275	14	12	.13	.11	.000	.000	.90
AUG 05...	.5	6.4	295	292	57	30	.06	.00	.100	.010	.63
SEP 11...	.3	9.4	283	267	96	0	.29	.26	.000	.000	.71

DATE	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	CARBON, ORGANIC SUSPENDED (MG/L AS C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 30...	.41	.64	.41	.050	.020	9.2	--	--	35	45	36
NOV 30...	.37	.63	.42	.090	.020	13	--	--	28	28	23
DEC 18...	.71	.83	.75	.320	.180	--	8.2	.5	10	13	97
JAN 10...	.49	.48	.52	.420	.250	4.1	--	--	15	18	93
FEB 12...	.63	--	.49	.260	.120	7.0	--	--	100	292	90
MAR 12...	.52	.71	.54	.200	.100	--	4.9	.4	23	32	89
APR 16...	.60	.60	.60	.460	.300	5.6	--	--	78	199	81
MAY 15...	.58	1.7	.61	.300	.160	11	--	--	203	652	73
JUN 05...	3.7	--	3.7	.230	.100	--	4.3	1.4	127	318	91
JUL 16...	.50	.90	.50	.260	.140	5.9	--	--	132	538	91
AUG 05...	.46	.73	.47	.160	.060	6.2	--	--	61	134	93
SEP 11...	.36	.71	.36	.210	.130	--	3.9	1.6	170	1060	83

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUSPENDED TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)
OCT 30...	[illegible]	--	--	--	--	--	--	--	--	--	--
DEC 18...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FEB 12...	[illegible]	--	--	--	--	--	--	--	--	--	--
MAR 12...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
APR 16...	[illegible]	--	--	--	--	--	--	--	--	--	--
JUN 05...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AUG 05...	[illegible]	--	--	--	--	--	--	--	--	--	--
SEP 11...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

08162000 COLORADO RIVER AT WHARTON, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)
NOV 30...	--	--	--	--	--	--	--	--	--	--	--
DEC 18...	0	0	0	0	<3	0	0	0	230	220	10
FEB 12...	--	--	--	--	--	--	--	--	--	--	--
MAR 12...	0	0	0	0	<3	3	1	2	280	270	<10
MAY 15...	--	--	--	--	--	--	--	--	--	--	--
JUN 05...	0	0	1	--	<3	8	5	3	2500	--	<10
AUG 05...	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	0	0	3	--	<3	8	3	5	2700	--	<10

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI)
NOV 30...	--	--	--	--	--	--	--	--	--	--	--
DEC 18...	35	5	30	60	30	30	.1	.0	.1	0	0
FEB 12...	--	--	--	--	--	--	--	--	--	--	--
MAR 12...	18	14	4	30	20	10	.1	.1	.0	3	2
MAY 15...	--	--	--	--	--	--	--	--	--	--	--
JUN 05...	38	0	42	90	--	<1	.1	.0	.1	3	3
AUG 05...	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	53	51	2	130	130	2	.7	.7	.0	5	1

DATE	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
NOV 30...	--	--	--	--	0	--	--	--	--	--
DEC 18...	0	1	1	0	0	0	0	60	60	<3
FEB 12...	--	--	--	--	0	--	--	--	--	--
MAR 12...	1	1	0	1	0	0	0	20	20	4
MAY 15...	--	--	--	--	0	--	--	--	--	--
JUN 05...	0	0	0	1	0	0	0	70	70	4
AUG 05...	--	--	--	--	0	--	--	--	--	--
SEP 11...	4	0	0	0	0	0	0	60	--	<3

DATE	TIME	GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L)	URANIUM DISSOLVED, EXTRACTION (UG/L)
NOV 30...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AUG 05...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

COLORADO RIVER BASIN

[illegible] COLORADO RIVER AT [illegible], CO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER [illegible] TO SEPTEMBER [illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	--	[illegible]	--	[illegible]	--	[illegible]	--	[illegible]	--

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	--	[illegible]	--	[illegible]	--	[illegible]	--	--	--	--

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE TIME	NOV 30,79 0920	MAR 12,80 1410	MAY 15,80 1015	JUN 5,80 0900
TOTAL CELLS/ML	130	180	450	630
DIVERSITY: DIVISION	0.6	0.0	1.2	0.9
.CLASS	0.6	0.0	1.2	0.9
..ORDER	0.9	0.0	1.2	1.8
...FAMILY	1.7	1.7	1.6	2.1
....GENUS	1.9	1.7	1.6	2.1

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...OOCYSTACEAE								
....KIRCHNERIELLA	--	-	--	-	--	-	51	8
...SCENEDESMACEAE								
....SCENEDESMUS	--	-	--	-	220#	48	100#	16
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CARTERIA	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	20#	16	--	-	--	-	39	6
..ZYGNEMATALES								
...ZYGNEMATACEAE								
....SPIROGYRA	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	5	4	--	-	--	-	240#	39
....MELOSIRA	--	-	--	-	--	-	--	-
..PENNALES								
...ACHNANTHACEAE								
....COCCONEIS	5	4	--	-	--	-	--	-
...DIATOMACEAE								
....DIATOMA	--	-	26	14	--	-	--	-
...FRAGILARIACEAE								
....SYNEDRA	--	-	13	7	--	-	--	-
...NAVICULACEAE								
....NAVICULA	15	12	51#	29	14	3	13	2
....PLEUROSIGMA	10	8	--	-	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	70#	56	90#	50	180#	39	180#	29
...SURIRELLACEAE								
....SURIRELLA	--	-	--	-	27	6	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	--	-	--	-
....ANACYSTIS	--	-	--	-	--	-	--	-
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....PHACUS	--	-	--	-	14	3	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08162000 COLORADO RIVER AT WHARTON, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE TIME	JUL 16,80 1440	AUG 5,80 1545	SEP 11,80 1000
TOTAL CELLS/ML	7800	4500	8100
DIVERSITY: DIVISION	1.0	1.0	0.5
.CLASS	1.0	1.0	0.5
..ORDER	1.4	1.4	0.6
...FAMILY	1.5	1.4	0.6
....GENUS	1.5	1.7	0.6

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...OOCYSTACEAE						
....KIRCHNERIELLA	--	-	--	-	--	-
...SCENEDESMACEAE						
....SCENEDESMUS	--	-	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CARTERIA	--	-	--	-	*	0
....CHLAMYDOMONAS	110	1	*	0	--	-
..ZYGNEMATALES						
...ZYGNEMATACEAE						
....SPIROGYRA	--	-	39	1	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	*	0	--	-	110	1
....MELOSIRA	--	-	--	-	*	0
..PENNALES						
...ACHNANTHACEAE						
....COCCONEIS	--	-	--	-	--	-
...DIATOMACEAE						
....DIATOMA	--	-	--	-	--	-
...FRAGILARIACEAE						
....SYNEDRA	--	-	--	-	--	-
...NAVICULACEAE						
....NAVICULA	230	3	51	1	*	0
....PLEUROSIGMA	--	-	--	-	--	-
...NITZSCHIACEAE						
....NITZSCHIA	2400#	30	1300#	28	790	10
...SURIRELLACEAE						
....SURIRELLA	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....AGMENELLUM	4600#	58	2500#	54	7200#	88
....ANACYSTIS	*	0	260	6	--	-
..HORMOGONALES						
...OSCILLATORIACEAE						
....OSCILLATORIA	510	7	440	10	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....PHACUS	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08162000 COLORADO RIVER AT WHARTON, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	20795	600	328	18400	50	2790	40	2270	230
NOV.	1979	12679	668	365	12500	56	1920	44	1510	250
DEC.	1979	15571	641	350	14700	54	2250	43	1790	240
JAN.	1980	38131	381	208	21400	31	3150	27	2740	140
FEB.	1980	26699	557	304	21900	46	3300	38	2720	210
MAR.	1980	23515	640	350	22200	53	3400	43	2700	240
APR.	1980	33452	521	285	25700	43	3840	36	3220	200
MAY	1980	101600	384	210	57500	31	8410	27	7400	150
JUNE	1980	45660	516	282	34800	42	5190	35	4360	200
JULY	1980	41050	521	285	31600	43	4720	36	3950	200
AUG.	1980	33262	525	286	25700	43	3850	36	3220	200
SEPT	1980	46287	503	275	34300	41	5110	35	4320	190
TOTAL		438701	**	**	321000	**	47900	**	40200	**
WTD. AVG.		1199	496	271	**	40	**	34	**	190

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	544	603	678	610	493	640	427	542	513	517	533	505
2	554	598	693	623	567	660	404	490	511	516	537	511
3	561	573	698	603	627	647	430	484	515	515	528	506
4	566	646	700	594	587	625	434	497	516	518	534	503
5	569	671	630	558	569	666	461	517	519	520	531	505
6	577	667	700	482	559	677	497	518	521	516	537	501
7	579	675	703	492	569	678	542	528	523	515	531	498
8	582	681	700	615	578	665	560	523	519	524	529	471
9	583	680	695	599	530	667	553	502	518	522	531	478
10	589	678	688	521	492	672	546	519	519	520	521	493
11	586	681	716	586	416	675	569	520	513	495	516	504
12	606	683	510	649	400	678	561	513	488	511	520	502
13	610	686	525	634	476	684	580	511	518	518	533	508
14	611	688	609	649	533	694	591	506	528	519	553	513
15	615	691	585	603	551	700	605	479	515	518	601	503
16	623	688	560	658	561	707	594	412	521	520	618	505
17	621	686	607	625	570	704	578	326	520	524	560	511
18	624	685	628	668	576	726	568	317	524	523	540	515
19	626	683	600	663	578	752	553	305	521	526	528	523
20	624	669	565	500	603	733	557	345	518	527	520	527
21	628	676	630	210	594	719	545	282	513	527	516	523
22	624	667	688	240	626	735	548	232	515	526	517	528
23	630	683	685	305	641	730	546	250	516	525	514	525
24	638	681	682	312	617	709	548	350	515	529	517	523
25	645	686	688	310	619	701	547	400	517	531	518	516
26	647	681	675	313	613	699	541	450	515	526	516	520
27	650	688	682	312	619	700	526	494	514	527	515	512
28	653	678	685	325	627	681	503	462	518	528	518	483
29	660	674	661	385	629	634	526	479	515	531	496	475
30	659	686	668	411	---	603	509	499	514	532	485	510
31	623	---	649	442	---	507	---	506	---	529	517	---
MEAN	610	670	651	500	566	680	532	444	516	522	530	507

COLORADO RIVER BASIN

08162000 COLORADO RIVER AT WHARTON, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25.0	17.0	9.0	---	7.0	---	18.0	22.0	28.0	30.0	28.5	28.0
2	25.0	16.0	10.0	11.0	8.0	---	19.0	22.0	28.0	30.0	29.0	28.0
3	26.0	17.0	10.0	13.0	8.0	7.0	20.0	23.0	28.0	31.0	29.0	28.0
4	24.0	16.0	11.0	9.0	9.0	12.5	19.0	24.0	28.0	30.0	28.0	27.0
5	22.0	18.0	12.0	10.0	17.0	14.0	19.0	24.0	---	30.0	29.0	28.0
6	23.0	19.0	13.0	14.0	12.0	13.0	20.0	25.0	29.0	30.0	29.0	26.5
7	24.0	16.0	11.0	13.0	13.0	17.0	21.0	25.0	29.0	---	28.0	27.0
8	25.0	16.0	---	11.0	15.0	19.0	20.0	25.0	29.0	30.0	27.0	26.0
9	25.0	20.0	12.0	11.0	10.0	18.0	18.0	22.0	29.0	30.5	28.0	26.0
10	25.0	17.0	14.0	12.0	8.0	20.0	19.0	24.0	28.0	30.0	27.0	26.0
11	22.0	15.0	15.0	15.0	9.0	---	22.0	25.0	27.0	30.0	26.0	27.0
12	22.0	14.0	---	13.0	9.0	20.0	20.0	25.0	28.0	30.5	27.0	---
13	24.0	14.0	11.0	12.0	10.0	18.0	15.0	25.0	27.0	30.0	27.0	---
14	21.0	13.0	11.0	14.0	12.0	16.0	13.0	24.0	28.0	29.0	28.0	28.0
15	24.0	13.0	---	17.0	14.0	16.0	16.0	25.0	28.0	29.5	28.0	28.0
16	23.0	13.0	11.0	18.0	11.0	19.5	18.0	23.0	28.0	30.0	27.0	26.0
17	24.0	15.0	8.0	18.0	---	20.0	19.0	22.0	28.0	30.0	---	28.0
18	24.0	17.0	7.0	17.0	12.0	14.0	20.0	23.0	29.0	30.5	28.0	28.0
19	24.0	19.0	8.0	17.0	12.0	15.0	20.0	23.0	29.0	30.5	28.0	27.5
20	25.0	21.0	11.0	19.0	15.0	19.0	22.0	23.0	---	30.5	28.0	28.0
21	25.0	22.0	13.0	18.0	16.0	14.0	21.0	24.0	30.0	29.0	28.0	28.0
22	25.0	14.0	16.0	15.0	17.0	16.0	22.0	25.0	---	29.0	28.0	28.0
23	18.0	11.0	18.0	13.0	17.0	18.0	22.0	25.0	30.0	28.0	28.0	28.0
24	17.0	12.0	14.0	11.0	16.0	17.0	23.0	26.0	30.0	29.5	---	28.0
25	17.0	12.0	---	12.0	14.0	17.0	23.0	---	30.0	29.5	28.0	28.0
26	19.0	12.0	13.0	13.0	14.0	17.0	21.0	---	30.0	28.5	27.5	27.5
27	---	15.0	15.0	12.0	14.0	17.0	20.0	28.0	30.0	---	27.5	26.0
28	21.0	14.0	15.0	12.0	15.0	16.0	20.0	27.5	30.0	29.5	27.5	27.0
29	22.0	11.0	13.0	13.0	17.0	17.0	22.0	28.0	30.0	27.0	27.0	---
30	23.0	9.0	11.0	13.0	---	14.0	23.0	28.0	30.0	29.0	27.5	26.0
31	19.0	---	10.0	---	---	15.0	---	28.0	---	29.0	28.0	---
MEAN	23.0	15.5	12.0	13.5	12.5	16.5	20.0	24.5	29.0	29.5	28.0	27.5

08162500 COLORADO RIVER NEAR BAY CITY, TX

LOCATION.--Lat 28°58'26", long 96°00'44", Matagorda County, Hydrologic Unit 12090302, on right bank 6,300 ft (1,920 m) downstream from bridge on State Highway 35, 7,100 ft (2,160 m) downstream from Texas and New Orleans Railroad Co. bridge, 2.8 mi (4.5 km) west of Bay City, and at mile 32.5 (52.3 km).

DRAINAGE AREA.--41,650 mi² (107,870 km²), approximately, of which 12,880 mi² (33,360 km²) probably is noncontributing.

PERIOD OF RECORD.--July 1940 (in WSP 1046), April 1948 to current year. Records of elevation collected in this vicinity since 1946 are contained in reports of the National Weather Service.

Water-quality records: Chemical and biochemical analyses: October 1974 to September 1975.

REVISED RECORDS.--WSP 1342: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. July 2-6, 1940, nonrecording gage at highway bridge, 6,300 ft (1,920 m) upstream at datum 30.60 ft (9.327 m) lower.

REMARKS.--Records good. Diversions above station for irrigation and municipal supply. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08161000. Brown and Root Engineers gage-height telemeter at station.

AVERAGE DISCHARGE.--32 years (water years 1949-80), 2,397 ft³/s (67.88 m³/s), 1,737,000 acre-ft/yr (2.14 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 84,100 ft³/s (2,380 m³/s) June 26, 1960; maximum elevation, 48.2 ft (14.69 m), present datum, July 4, 1940, at site 6,300 ft (1,920 m) upstream at bridge on State Highway 35, observed by Corps of Engineers, elevation 46.6 ft (14.20 m), adjusted to present site; no flow at times in 1951-53 and 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation since 1869, 56.1 ft (17.10 m) Dec. 10, 1913. Flood in July 1869 probably reached about same elevation. Elevation of other floods are as follows: May 8, 1922, 55.4 ft (16.89 m); June 1929, 55.0 ft (16.76 m); June 22, 1935, 54.6 ft (16.64 m); Oct. 5, 1936, 52.2 ft (15.91 m); Aug. 2, 1938, 53.4 ft (16.28 m); Nov. 27, 1940, 47.6 ft (14.51 m). All above flood data from information by Texas and New Orleans Railroad Co. and adjusted to present site.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,300 ft³/s (405 m³/s) May 19, elevation, 19.20 ft (5.852 m); minimum daily, 0.90 ft³/s (0.025 m³/s) Aug. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	778	648	419	717	773	470	3280	839	524	466	671	294
2	713	608	419	709	1760	538	2060	804	458	388	477	318
3	675	569	401	625	2360	541	1690	1070	421	345	469	353
4	650	556	402	634	1670	612	1450	1210	409	363	508	506
5	617	546	414	600	1160	646	1410	1350	397	362	440	513
6	611	542	408	571	944	587	1210	1060	381	365	373	509
7	597	553	396	462	825	561	891	753	390	382	311	471
8	544	542	398	420	792	567	693	716	408	382	467	692
9	527	524	397	401	1670	574	574	1310	416	382	987	1060
10	529	506	482	388	1730	659	456	1340	419	405	1460	1050
11	478	498	481	382	1620	624	352	1450	602	460	1430	1090
12	427	488	491	382	1270	575	359	1990	600	551	838	843
13	393	454	1620	381	1090	554	413	1340	473	556	314	564
14	450	416	1340	362	1020	534	781	630	424	525	197	560
15	869	415	1150	360	997	509	800	665	418	804	111	609
16	746	417	790	359	892	517	686	5230	416	709	18	527
17	668	427	569	356	795	499	809	12400	403	713	.90	272
18	652	439	479	388	749	449	785	9200	381	694	120	158
19	640	429	450	397	768	344	789	13100	389	756	250	66
20	627	432	450	423	844	299	893	12500	567	709	220	68
21	609	436	434	5470	831	412	848	10300	506	777	187	107
22	598	456	431	8420	774	485	803	7080	462	895	147	212
23	568	465	417	10600	767	439	569	3340	510	889	70	253
24	578	473	408	6720	712	443	516	1710	510	939	74	397
25	553	487	400	3920	640	370	475	1050	440	844	72	440
26	532	480	391	2570	606	421	454	1090	396	821	32	560
27	545	460	390	1740	430	654	791	915	375	936	26	833
28	549	433	385	1330	530	892	1060	779	351	816	29	1300
29	530	416	424	1080	357	1130	1280	593	424	830	107	1820
30	565	413	570	938	---	1760	1020	480	469	798	177	2310
31	606	---	555	840	---	5270	---	451	---	820	248	---
TOTAL	18424	14528	16761	52945	29376	22935	28197	96745	13339	19682	10830.90	18755
MEAN	594	484	541	1708	1013	740	940	3121	445	635	349	625
MAX	869	648	1620	10600	2360	5270	3280	13100	602	939	1460	2310
MIN	393	413	385	356	357	299	352	451	351	345	.90	66
AC-FT	36540	28820	33250	105000	58270	45490	55930	191900	26460	39040	21480	37200

CAL YR 1979 TOTAL 1087712.00 MEAN 2980 MAX 36500 MIN 379 AC-FT 2157000
WTR YR 1980 TOTAL 342517.90 MEAN 936 MAX 13100 MIN .90 AC-FT 679400

08162600 TRES PALACIOS RIVER NEAR MIDFIELD, TX

LOCATION.--Lat 28°55'40", long 96°10'15", Matagorda County, hydrologic Unit 12100401, at left downstream end of bridge on Farm Road 456, 1.0 mi (1.6 km) downstream from Juanita Creek, and 2.4 mi (3.9 km) southeast of Midfield.

DRAINAGE AREA.--145 mi² (376 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1970 to current year. Prior to October 1973, published as Tres Palacios Creek near Midfield.

GAGE.--Water-stage recorder. Datum of gage is 5.38 ft (1.640 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Ten known diversions above stations (amounts unknown). An undetermined amount of water from irrigated ricefields enters stream upstream at various points. Recording rain gage at station.

AVERAGE DISCHARGE.--10 years (water years 1971-80), 150 ft³/s (4.248 m³/s), 108,700 acre-ft/yr (134 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,810 ft³/s (249 m³/s) Sept. 20, 1979, gage height, 31.73 ft (9.671 m), from floodmarks; minimum daily, 1.0 ft³/s (0.028 m³/s) Nov. 3-5, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1885, 37 ft (11.3 m) in June 1960 and 35 ft (10.7 m) in August 1945, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,600 ft³/s (45.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Jan. 23	0400	2,400	68.0	25.01	7.623
May 19	2300	*5,310	150	29.62	9.028

Minimum daily discharge, 1.8 ft³/s (0.051 m³/s) Dec. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	90	10	23	24	126	45	28	24	22	66	34
2	50	52	9.8	15	22	68	26	32	28	22	54	31
3	40	32	10	347	27	37	21	26	29	24	47	24
4	32	23	9.8	283	23	24	18	31	23	23	33	23
5	29	18	10	78	21	19	13	29	22	21	26	24
6	25	15	11	37	20	17	20	21	21	19	25	31
7	22	13	10	23	19	16	16	14	20	19	25	36
8	22	12	11	15	36	15	14	50	20	27	30	39
9	25	14	11	11	605	14	21	140	21	25	36	45
10	27	13	11	9.6	491	13	17	136	23	26	59	176
11	27	11	11	10	161	13	22	72	26	27	61	156
12	27	11	119	8.6	76	13	26	54	18	42	55	95
13	25	10	693	7.4	51	11	39	26	17	36	32	63
14	27	9.6	600	6.6	38	12	47	18	17	28	27	44
15	22	9.6	266	5.9	32	11	29	15	17	43	29	40
16	19	9.9	129	5.4	27	12	20	203	17	59	31	40
17	22	12	70	5.4	23	31	16	283	17	43	27	34
18	20	12	33	8.0	21	29	13	286	18	39	19	29
19	19	11	18	20	20	16	14	4150	18	47	18	25
20	18	11	13	13	20	14	23	5010	18	55	17	25
21	17	12	9.8	410	19	13	21	3440	20	81	15	25
22	15	15	8.7	1420	17	12	20	2030	44	99	14	52
23	13	28	8.0	2140	15	12	21	597	67	125	12	44
24	12	21	6.5	1160	14	16	25	182	49	87	13	62
25	12	14	5.4	317	13	15	40	90	33	54	14	144
26	11	12	5.2	138	24	13	45	57	26	43	15	104
27	14	11	2.5	85	16	137	25	41	26	54	16	230
28	14	10	1.8	54	14	129	23	31	26	93	14	403
29	12	9.5	102	37	13	317	20	29	24	198	14	287
30	27	10	183	46	---	383	36	27	21	124	23	626
31	220	---	57	43	---	108	---	23	---	84	34	---
TOTAL	925	531.6	2445.5	6781.9	1902	1666	736	17171	750	1689	901	2991
MEAN	29.8	17.7	78.9	219	65.6	53.7	24.5	554	25.0	54.5	29.1	99.7
MAX	220	90	693	2140	605	383	47	5010	67	198	66	626
MIN	11	9.5	1.8	5.4	13	11	13	14	17	19	12	23
AC-FT	1830	1050	4850	13450	3770	3300	1460	34060	1490	3350	1790	5930

CAL YR 1979 TOTAL 109962.7 MEAN 301 MAX 8590 MIN 1.8 AC-FT 218100
WTR YR 1980 TOTAL 38490.0 MEAN 105 MAX 5010 MIN 1.8 AC-FT 76340

08162600 TRES PALACIOS RIVER NEAR MIDFIELD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)
NOV 08...	1629	13	1350	7.7	19.5	25	8.7	94	3.0	370	99
DEC 20...	1348	14	762	7.8	14.5	70	9.4	91	2.6	210	49
JAN 31...	1426	37	538	8.0	12.0	220	12.0	109	2.5	150	23
MAR 13...	1435	12	1400	8.3	21.0	6.8	11.2	124	1.6	350	50
APR 24...	1457	37	1000	7.9	24.0	20	8.4	100	3.4	290	57
JUN 05...	1403	23	1020	7.7	28.0	17	7.9	100	2.4	290	54
JUL 17...	1435	44	819	8.0	30.0	42	7.0	92	3.4	230	0
AUG 28...	1411	14	952	7.9	28.5	12	7.2	91	.8	260	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
NOV 08...	100	29	140	3.2	5.2	330	0	38	260	.5	20
DEC 20...	59	16	70	2.1	7.2	200	0	32	120	.3	17
JAN 31...	42	12	54	1.9	4.3	160	0	23	79	.2	14
MAR 13...	92	28	150	3.5	4.4	360	0	43	260	.4	8.9
APR 24...	77	23	100	2.6	6.1	280	0	41	170	.5	17
JUN 05...	79	23	100	2.5	4.1	290	0	32	170	1.8	17
JUL 17...	60	19	76	2.2	3.1	280	0	19	120	.5	26
AUG 28...	68	23	100	2.7	7.5	320	0	20	170	.5	31

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
NOV 08...	756	74	.06	.02	.08	.04	.68	.72	.210	--
DEC 20...	420	56	1.3	.08	1.4	.57	3.0	3.6	.060	13
JAN 31...	308	274	2.1	.05	2.1	.10	.52	.62	.280	15
MAR 13...	764	10	.01	.01	.02	.00	.58	.58	.290	3.3
APR 24...	573	35	1.9	.08	2.0	.11	1.2	1.3	.200	11
JUN 05...	570	68	.93	.02	.95	.04	1.1	1.1	.120	8.9
JUL 17...	462	84	.13	.01	.14	.00	1.1	1.1	.210	9.6
AUG 28...	578	29	.00	.02	.00	.47	.53	1.0	.100	8.2

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
NOV							
08...	1629	4	300	1	0	1	10
JAN							
31...	1426	2	100	<1	0	1	80
JUL							
17...	1435	4	200	<1	50	1	<10

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV						
08...	0	30	.0	0	0	4
JAN						
31...	0	20	.2	0	0	6
JUL						
17...	0	7	.4	0	0	3

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	CHLOR-DANE, TOTAL (UG/L)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
JAN										
31...	1426	.0	4	.00	.00	.0	.0	0	.00	.0
JUL										
17...	1435	.0	0	.00	.00	.0	.0	0	.00	.0

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
JAN										
31...	.00	.0	.00	.0	.06	.00	.7	.00	.00	.0
JUL										
17...	.00	.0	.00	.0	.00	.00	.3	.00	.00	.0

DATE	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)
JAN										
31...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0
JUL										
17...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN										
31...	.00	.00	.00	.00	0	0	.00	.00	.00	.00
JUL										
17...	.11	.00	.00	.00	0	20	.00	.00	.00	.00

08162700 EAST CARANCAHUA CREEK NEAR BLESSING, TX
(Reconnaissance partial-record station)

LOCATION.--Lat 28°51'48", long 96°17'05", Matagorda County, Hydrologic Unit 12100401, at bridge on Farm Road 616, 100 ft (30 m) downstream from Missouri Pacific Railroad bridge, and 4.2 mi (6.8 km) west of Blessing.

DRAINAGE AREA.--81.2 mi² (210.3 km²).

PERIOD OF RECORD.--Periodic discharge measurements: September 1967 to July 1968, February 1970 to current year. Periodic water-quality data: February 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)
NOV 08...	1405	3.8	825	7.5	19.5	31	9.0	99	3.0	220	20
DEC 20...	1028	3.8	632	8.0	15.0	130	10.0	98	1.9	160	24
JAN 31...	1649	12	883	8.1	12.0	50	11.0	100	1.6	260	43
MAR 13...	1323	4.0	1400	8.4	20.5	20	9.7	107	1.8	380	73
APR 24...	1043	18	1100	8.2	23.0	34	8.7	101	3.4	250	0
JUN 05...	1043	5.8	960	7.7	28.5	23	6.7	86	2.0	230	0
JUL 17...	1135	6.0	1020	8.0	32.0	32	7.0	95	3.4	210	0
AUG 28...	1034	.48	1300	7.6	28.0	15	5.6	71	1.4	270	0

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
NOV 08...	52	23	93	2.7	5.9	250	0	30	140	.5	19
DEC 20...	39	16	57	1.9	6.5	170	0	34	91	.3	15
JAN 31...	58	27	94	2.6	4.2	260	0	48	150	.4	15
MAR 13...	83	43	160	3.6	3.7	380	0	67	250	.7	10
APR 24...	59	26	150	4.1	5.4	330	0	42	200	.7	16
JUN 05...	54	23	110	3.2	3.9	300	0	25	140	.5	20
JUL 17...	44	24	150	4.5	2.3	320	0	21	190	.8	25
AUG 28...	56	32	180	4.8	7.5	350	0	28	270	.8	36

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
NOV 08...	487	120	.11	.01	.12	.02	.98	1.0	.130	8.8
DEC 20...	343	103	1.3	.05	1.3	.06	1.6	1.7	.100	17
JAN 31...	525	56	.33	.01	.34	.02	.44	.46	.080	17
MAR 13...	805	69	.06	.01	.07	.00	.71	.71	.090	8.1
APR 24...	662	62	.46	.02	.48	.06	1.1	1.2	.100	9.3
JUN 05...	524	40	.11	.01	.12	.00	1.3	1.3	.110	12
JUL 17...	615	--	.00	.00	.00	.00	1.1	1.1	.140	11
AUG 28...	783	35	.00	.01	.00	.41	1.1	1.5	.160	12

08162700 EAST CARANCAHUA CREEK NEAR BLESSING, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
NOV 08...	1405	2	200	<1	0	0	30
JAN 31...	1649	2	200	<1	0	1	200
JUL 17...	1135	7	200	<1	10	3	<10

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 08...	0	20	.1	0	0	4
JAN 31...	0	30	.1	0	0	20
JUL 17...	4	5	.4	0	0	5

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
JAN 31...	1649	.0	6	.00	.00	.0	.0	0	.00	.0
JUL 17...	1135	.0	0	.00	.00	.0	.0	0	.00	.0

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
JAN 31...	.00	.0	.00	.0	.00	.00	.0	.00	.00	.0
JUL 17...	.00	.2	.00	.0	.00	.00	.1	.00	.00	.0

DATE	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)	METH- OXY- CHLOR, TOT. IN BOTTOM MATL. (UG/KG)
JAN 31...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0
JUL 17...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0

DATE	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 31...	.00	.00	.00	.00	0	0	.00	.00	.36	.00
JUL 17...	.02	.00	.00	.00	0	0	.00	.00	.00	.00

08163500 LAVACA RIVER AT HALLETTSVILLE, TX

LOCATION.--Lat 29°26'35", long 96°56'39", Lavaca County, Hydrologic Unit 12100101, on left bank 75 ft (23 m) downstream from bridge on U.S. Highway 77 in Hallettsville and 0.7 mi (1.1 km) downstream from Campbell Branch.

DRAINAGE AREA.--108 mi² (280 km²).

PERIOD OF RECORD.--July 1939 to current year.

REVISED RECORDS.--WSP 1312: 1942(M), 1944(M). WSP 1732: 1952(M). WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 186.72 ft (56.912 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 19, 1960, water-stage recorder for high stages and movable nonrecording gage for stages below about 6.2 ft (1.89 m). Apr. 20, 1960, to June 2, 1961, movable nonrecording gage. All gages at same site and datum.

REMARKS.--Records good. No diversion above station. The Corps of Engineers began channel rectification 1.6 mi (2.6 km) downstream from gage in April 1959. This rectification reached the gage Sept. 21, 1959, and was completed in February 1960. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--41 years, 48.4 ft³/s (1.371 m³/s), 6.08 in/yr (154 mm/yr), 35,100 acre-ft/yr (43.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 93,100 ft³/s (2,640 m³/s) June 30, 1940, gage height, 40.60 ft (12.375 m), from floodmarks, from rating curve extended above 23,000 ft³/s (651 m³/s) on basis of slope-area measurement of peak flow; no flow at times in 1953 and 1956.

Maximum stage since at least 1840, that of June 30, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage from about 1870 to 1940, 32.8 ft (10.00 m) July 16, 1936, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,300 ft³/s (65.1 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 19	1000	3,230	91.5	20.00	6.096
May 21	1600	*6,880	195	23.00	7.010

Minimum daily discharge, 0.52 ft³/s (0.015 m³/s) Aug. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	4.0	4.3	6.7	17	13	9.9	6.0	7.8	1.5	1.5	.63
2	3.3	3.5	4.4	6.3	17	12	9.3	19	7.1	1.5	1.2	1.3
3	3.3	3.2	4.5	6.2	17	11	9.1	16	6.5	1.4	1.1	1.1
4	3.1	3.1	4.6	6.9	17	10	8.7	8.6	6.0	1.4	.99	.88
5	2.9	3.1	4.7	7.0	16	9.7	8.0	6.6	5.8	1.3	1.5	.87
6	2.9	3.2	4.8	6.5	15	9.1	7.8	5.7	5.5	1.3	1.2	1.5
7	2.9	3.2	4.8	6.3	15	9.1	7.8	5.9	5.1	1.3	1.5	5.0
8	3.0	3.3	4.8	6.1	51	9.1	7.8	7.9	4.7	1.3	1.3	9.1
9	3.0	3.4	4.8	5.9	175	8.9	7.5	7.8	4.9	1.2	1.1	5.8
10	2.8	3.4	4.8	6.1	49	8.7	6.9	6.7	5.3	1.2	2.8	4.1
11	2.8	3.3	5.1	6.4	30	8.6	6.9	6.2	3.6	1.2	2.1	2.3
12	3.0	3.3	7.3	6.1	24	8.6	6.9	6.1	5.4	1.1	1.9	1.8
13	3.1	3.3	14	6.1	21	8.2	9.1	7.0	4.0	1.1	1.5	1.6
14	3.2	3.3	10	6.1	19	7.7	8.7	11	3.5	1.0	1.2	1.6
15	3.2	3.5	8.2	6.3	18	7.5	7.9	141	3.4	1.2	1.1	1.4
16	3.4	3.5	7.2	6.6	17	7.7	7.1	339	3.1	1.2	1.1	1.2
17	3.4	3.7	6.4	6.9	15	8.2	6.7	76	2.9	1.2	.94	1.1
18	3.6	3.9	6.1	7.0	15	8.2	6.4	39	3.1	1.2	.89	1.4
19	3.5	4.0	6.1	7.0	15	7.8	6.7	2030	2.6	1.2	.85	1.1
20	3.5	4.2	6.1	179	15	8.0	7.1	179	2.4	1.2	.82	1.1
21	3.5	13	6.3	190	14	7.7	7.0	2640	2.1	1.2	.80	1.1
22	3.3	9.6	6.2	221	12	7.5	7.0	389	2.0	1.4	.75	1.0
23	3.1	5.9	6.5	80	12	7.3	6.9	53	2.1	1.4	.67	.99
24	3.1	5.0	6.8	38	11	7.5	6.8	31	2.0	1.8	.64	1.6
25	3.1	4.9	6.8	30	10	7.3	9.0	22	2.0	1.4	.62	1.1
26	3.1	4.8	6.0	26	9.5	7.8	9.4	18	1.8	1.2	.55	2.2
27	3.1	4.8	6.1	22	9.3	12	8.6	15	1.7	1.0	.52	5.6
28	3.1	4.5	8.2	20	9.3	30	7.5	16	1.7	1.0	.57	2.8
29	3.1	4.6	17	19	9.4	27	6.4	13	1.6	1.0	.57	2.2
30	3.9	4.3	13	19	---	15	6.1	9.9	1.5	1.0	.59	18
31	4.2	---	8.4	18	---	11	---	8.6	---	1.7	.60	---
TOTAL	99.9	130.8	214.3	984.5	674.5	321.2	231.0	6140.0	111.2	39.1	33.47	81.47
MEAN	3.22	4.36	6.91	31.8	23.3	10.4	7.70	198	3.71	1.26	1.08	2.72
MAX	4.2	13	17	221	175	30	9.9	2640	7.8	1.8	2.8	18
MIN	2.8	3.1	4.3	5.9	9.3	7.3	6.1	5.7	1.5	1.0	.52	.63
CFSM	.03	.04	.06	.29	.22	.10	.07	1.83	.03	.01	.01	.03
IN.	.03	.05	.07	.34	.23	.11	.08	2.11	.04	.01	.01	.03
AC-FT	198	259	425	1950	1340	637	458	12180	221	78	66	162

CAL YR 1979 TOTAL 29894.40 MEAN 81.9 MAX 5520 MIN 2.8 CFSM .76 IN 10.30 AC-FT 59300
WTR YR 1980 TOTAL 9061.44 MEAN 24.8 MAX 2640 MIN .52 CFSM .23 IN 3.12 AC-FT 17970

08164000 LAVACA RIVER NEAR EDNA, TX

(National stream-quality accounting network)

LOCATION.--Lat 28°57'35", long 96°41'10", Jackson County, Hydrologic Unit 12100101, at downstream side near center of upstream bridge of two bridges on U.S. Highway 59, 660 ft (201 m) upstream from Texas and New Orleans Railroad Co. bridge, and 2.8 mi (4.5 km) southwest of Edna.

DRAINAGE AREA.--817 mi^2 (2,116 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1938 to current year.

REVISED RECORDS.--WSP 1923: 1955. WRD TX-73-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 13.88 ft (4.231 m) National Geodetic Vertical Datum of 1929. Prior to June 6, 1939, nonrecording gage (property of Corps of Engineers); June 6, 1939, to Apr. 3, 1957, nonrecording gage at site 110 ft (34 m) downstream; Apr. 4, 1957, to Mar. 21, 1961, nonrecording gage; all at same datum.

REMARKS.--Water-discharge records good. Small diversions above station for irrigation.

AVERAGE DISCHARGE.--42 years, 324 ft^3/s (9.176 m^3/s), 5.39 in/yr (137 mm/yr), 234,700 acre-ft/yr (289 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73,000 ft^3/s (2,070 m^3/s) July 1, 1940, gage height, 32.51 ft (9.909 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1880, 33.8 ft (10.30 m) May 25, 1936, discharge, 83,400 ft^3/s (2,360 m^3/s), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,100 ft^3/s (116 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Jan. 22	0800	6,340	180	21.22	6.468
May 20	0600	*8,330	236	22.37	6.818

Minimum discharge, 16 ft^3/s (0.45 m^3/s) Aug. 26, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	109	48	50	100	117	87	84	55	125	33	20	19
2	101	49	50	81	112	81	125	58	108	32	20	18
3	96	49	49	74	112	84	156	57	98	31	19	18
4	91	48	49	68	109	87	92	51	90	31	19	18
5	85	46	49	65	108	86	80	65	85	31	18	23
6	82	45	50	64	105	83	74	47	79	34	19	34
7	78	45	50	64	98	83	73	46	75	31	19	32
8	74	44	50	64	163	83	70	54	70	40	19	31
9	71	45	50	63	1400	81	67	60	67	35	26	54
10	67	45	50	62	1670	80	64	56	64	35	27	44
11	64	44	50	61	591	80	63	60	62	33	33	49
12	63	44	53	60	297	80	66	60	64	46	25	38
13	66	44	54	58	218	77	64	60	65	40	24	31
14	64	43	56	59	182	74	63	54	58	34	24	26
15	61	43	83	59	162	73	64	59	53	29	23	24
16	60	43	79	58	143	72	66	441	49	26	23	22
17	59	43	69	57	126	74	64	1060	48	25	23	21
18	58	44	62	54	120	73	62	648	46	24	21	23
19	57	44	60	54	117	71	61	6300	44	27	20	24
20	56	45	59	289	116	72	66	7700	43	25	20	24
21	55	47	57	4000	113	71	60	3650	44	26	19	22
22	54	49	57	5740	108	69	58	1330	43	25	19	20
23	52	72	56	2460	103	69	60	2450	41	29	18	19
24	50	81	57	840	98	69	62	583	41	25	17	20
25	49	65	57	415	92	69	58	316	38	27	18	21
26	50	57	57	291	88	68	54	243	37	30	17	24
27	50	55	59	224	86	68	52	197	36	28	16	65
28	50	52	59	178	84	76	55	170	35	27	17	88
29	50	51	68	153	84	90	53	206	34	28	17	46
30	54	50	71	142	---	125	51	317	40	23	20	250
31	55	---	111	128	---	106	---	169	---	21	20	---
TOTAL	2031	1480	1831	16085	6922	2461	2087	26622	1782	931	640	1148
MEAN	65.5	49.3	59.1	519	239	79.4	69.6	859	59.4	30.0	20.6	38.3
MAX	109	81	111	5740	1670	125	156	7700	125	46	33	250
MIN	49	43	49	54	84	68	51	46	34	21	16	18
CFSM	.08	.06	.07	.64	.29	.10	.09	1.05	.07	.04	.03	.05
IN.	.09	.07	.08	.73	.32	.11	.10	1.21	.08	.04	.03	.05
AC-FT	4030	2940	3630	31900	13730	4880	4140	52800	3530	1850	1270	2280

CAL YR 1979 TOTAL 274934 MEAN 753 MAX 10700 MIN 43 CFSM .92 IN 12.52 AC-FT 545300
WTR YR 1980 TOTAL 64020 MEAN 175 MAX 7700 MIN 16 CFSM .21 IN 2.91 AC-FT 127000

08164000 LAVACA RIVER NEAR EDNA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1960 to September 1977. Chemical and biochemical analyses: October 1977 to current year. Pesticide analyses: January 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1977 to current year.
WATER TEMPERATURES: November 1977 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 899 micromhos April 22, 1978; minimum daily, 100 micromhos May 5, 1979, and May 20, 1980.
WATER TEMPERATURES:(1977-78): Maximum daily, 33.0°C July 16, 1978; minimum daily, 5.0°C January 22, 1978.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 857 micromhos May 7; minimum daily, 100 micromhos May 20.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 02...	1004	102	670	8.1	23.5	8.0	7.4	87	2.0	300	540
NOV 06...	1505	44	744	8.1	19.0	5.2	9.0	95	2.3	110	220
DEC 11...	0828	50	807	8.2	15.0	6.5	8.6	84	1.6	280	140
JAN 16...	1400	58	801	8.1	18.0	6.8	9.2	96	2.7	170	130
FEB 12...	1640	280	336	8.1	10.0	44	10.3	90	2.4	K9000	4500
MAR 12...	1130	80	787	8.1	21.5	6.0	8.7	99	2.6	120	72
APR 08...	1035	70	778	8.0	20.0	42	8.1	88	1.5	380	950
MAY 07...	1237	44	857	8.1	24.5	11	8.2	98	1.2	150	230
JUN 10...	0918	64	716	8.3	26.0	5.9	7.0	85	1.7	200	340
JUL 10...	0955	33	796	8.0	28.0	14	6.4	81	4.3	480	210
AUG 06...	1400	19	760	8.2	30.0	10	7.4	97	1.4	760	200
SEP 10...	0940	41	624	8.1	25.5	68	6.2	75	4.4	2500	1400

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 02...	250	0	92	5.7	38	1.0	3.4	310	0	21	52
NOV 06...	270	0	100	5.8	49	1.3	2.7	350	0	27	64
DEC 11...	300	4	110	5.9	54	1.4	2.4	360	0	24	71
JAN 16...	300	20	110	5.9	62	1.6	2.3	340	0	29	90
FEB 12...	120	13	42	3.1	25	1.0	3.9	130	0	16	34
MAR 12...	300	31	110	6.6	62	1.6	2.4	330	0	30	84
APR 08...	280	3	100	6.3	62	1.6	2.6	330	0	16	79
MAY 07...	280	26	100	6.2	71	1.9	2.9	340	0	28	93
JUN 10...	300	18	110	5.7	46	1.2	3.3	330	12	22	65
JUL 10...	240	0	84	7.9	74	2.1	2.6	340	0	16	83
AUG 06...	240	5	88	6.0	63	1.8	2.7	330	0	19	76
SEP 10...	150	0	49	6.8	71	2.5	5.8	240	0	5.8	77

08164000 LAVACA RIVER NEAR EDNA, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)
OCT 02...	.3	24	352	390	.21	.21	.110	.000	.55	.39
NOV 06...	.4	23	452	446	.31	.22	.030	.020	.40	.41
DEC 11...	.3	22	483	469	.38	.40	.000	.000	.44	.40
JAN 16...	.4	19	478	489	.54	.56	.020	.060	.43	.33
FEB 12...	.2	16	211	207	.47	.43	.050	.020	1.7	.64
MAR 12...	.4	18	468	476	.22	.07	.020	.000	.43	.43
APR 08...	.2	22	492	453	.38	.41	.000	.020	.78	.49
MAY 07...	.5	22	504	475	.22	.22	.010	.020	.57	.51
JUN 10...	.4	25	439	446	.00	.00	.040	.040	.69	.46
JUL 10...	.6	27	481	462	.02	.01	.090	.030	1.0	.65
AUG 06...	.4	26	464	426	.00	.00	.000	.000	.86	.34
SEP 10...	.3	36	391	370	.11	.12	.090	.060	1.3	1.3

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED (MG/L AS C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 02...	.66	.39	.100	.060	11	--	--	130	36	30
NOV 06...	.43	.43	.110	.010	--	15	.2	132	16	34
DEC 11...	.44	.40	.090	.030	11	--	--	130	18	17
JAN 16...	.45	.39	.140	.110	3.3	--	--	112	18	28
FEB 12...	1.7	.66	.230	.070	--	11	3.0	130	98	92
MAR 12...	.45	.43	.110	.040	7.6	--	--	79	17	20
APR 08...	.78	.51	.170	.090	7.1	--	--	79	15	68
MAY 07...	.58	.53	.160	.120	--	4.4	1.1	74	8.8	46
JUN 10...	.73	.50	.120	.030	8.2	--	--	142	25	36
JUL 10...	1.1	.68	.080	.100	4.5	--	--	96	8.6	58
AUG 06...	.86	.34	.080	.030	--	13	.2	87	4.5	66
SEP 10...	1.4	1.4	.210	.100	15	--	--	143	16	99

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)
NOV 06...	1505	4	1	3	600	300	300	0	0	<1	0
DEC 11...	0828	--	--	--	--	--	--	--	--	--	--
FEB 12...	1640	3	1	2	400	0	400	0	0	0	10
MAR 12...	1130	--	--	--	--	--	--	--	--	--	--
MAY 07...	1237	5	0	5	300	0	400	0	--	<1	0
JUN 10...	0918	--	--	--	--	--	--	--	--	--	--
AUG 06...	1400	6	1	5	500	200	300	0	0	2	0
SEP 10...	0940	--	--	--	--	--	--	--	--	--	--

08164000 LAVACA RIVER NEAR EDNA, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)
NOV 06...	0	0	0	0	<3	0	0	0	300	280	20
DEC 11...	--	--	--	--	--	--	--	--	--	--	--
FEB 12...	10	0	0	0	1	7	4	3	2300	2200	100
MAR 12...	--	--	--	--	--	--	--	--	--	--	--
MAY 07...	0	0	0	--	<3	1	0	1	370	360	10
JUN 10...	--	--	--	--	--	--	--	--	--	--	--
AUG 06...	0	10	0	--	<3	4	3	1	450	440	10
SEP 10...	--	--	--	--	--	--	--	--	--	--	--

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI)
NOV 06...	2	2	0	80	40	40	.1	.1	.0	2	2
DEC 11...	--	--	--	--	--	--	--	--	--	--	--
FEB 12...	4	1	3	100	90	10	.4	.2	.2	5	1
MAR 12...	--	--	--	--	--	--	--	--	--	--	--
MAY 07...	1	1	0	80	60	20	.1	.0	.1	5	2
JUN 10...	--	--	--	--	--	--	--	--	--	--	--
AUG 06...	3	2	1	130	100	30	.1	.0	.1	4	1
SEP 10...	--	--	--	--	--	--	--	--	--	--	--

DATE	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	~~ZINC,~~ SUSPENDED RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
NOV 06...	0	0	0	0	0	0	0	0	0	3
DEC 11...	--	--	--	--	0	--	--	--	--	--
FEB 12...	4	1	1	0	0	0	0	40	40	0
MAR 12...	--	--	--	--	0	--	--	--	--	--
MAY 07...	3	0	0	0	0	0	0	10	--	<3
JUN 10...	--	--	--	--	2	--	--	--	--	--
AUG 06...	3	0	0	0	5	5	0	10	7	3
SEP 10...	--	--	--	--	0	--	--	--	--	--

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	CHLORDANE, TOTAL (UG/L)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG)
FEB 12...	1640	.0	0	.00	.00	3.1	.0	0	.00	.0
AUG 06...	1400	--	0	--	--	.0	--	0	--	.0

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)
FEB 12...	.00	.0	.00	.0	.00	.00	.0	.00	.00	.0
AUG 06...	--	.0	--	.0	--	--	.0	--	--	.0

08164000 LAVACA RIVER NEAR EDNA, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)
FEB 12...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0
AUG 06...	--	--	.0	--	.0	--	.0	--	--	.0

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOXA-PHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
FEB 12...	.00	.00	.00	.00	0	0	.00	.01	.01	.00
AUG 06...	--	--	--	--	--	0	--	.00	.00	.00

DATE	LENGTH OF EXPO-SURE (DAYS)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS)
OCT 02...	34	1.89	2.28	3.75	1.50	104
NOV 06...	35	.870	1.02	1.21	.390	124
MAR 12...	29	32.7	34.9	30.7	.000	71.7
MAY 07...	29	18.2	21.7	35.1	2.21	99.7

08164000 LAVACA RIVER NEAR EDNA, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	NOV 6,79	MAR 12,80	MAY 7,80	JUN 10,80
TIME	1505	1130	1237	0918
TOTAL CELLS/ML	590	8400	12000	42000
DIVERSITY: DIVISION	1.5	2.1	1.6	1.4
.CLASS	1.5	2.1	1.6	1.4
..ORDER	2.3	2.9	2.3	1.6
...FAMILY	2.7	3.0	2.7	2.6
....GENUS	3.0	3.4	3.0	3.7

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	*	0
...COELASTRACEAE								
....COELASTRUM	--	-	--	-	--	-	2100	5
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	--	-	620	1
....MICRACTINIUM	--	-	--	-	200	2	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	100#	17	720	9	700	6	3300	8
....CHLORELLA	--	-	--	-	--	-	*	0
....CHODATELLA	--	-	--	-	700	6	420	1
....DICTYOSPHAERIUM	--	-	360	4	--	-	2500	6
....KIRCHNERIELLA	14	2	420	5	--	-	830	2
....OOCYSTIS	--	-	--	-	--	-	830	2
....SELENASTRUM	--	-	--	-	150	1	2100	5
....TETRAEDRON	--	-	180	2	--	-	*	0
....WESTELLA	--	-	--	-	200	2	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	--	-	6700#	16
....CRUCIGENIA	--	-	--	-	--	-	1700	4
....SCENEDESMUS	86	15	--	-	1800#	16	5000	12
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CARTERIA	29	5	--	-	--	-	--	-
....CHLAMYDOMONAS	72	12	600	7	1100	9	1000	2
..ZYGNEMATALES								
...DESMIDIACEAE								
....STAURASTRUM	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	43	7	1300#	16	400	3	7700#	18
....MELOSIRA	29	5	--	-	--	-	--	-
....STEPHANODISCUS	--	-	60	1	--	-	--	-
..PENNALES								
...EUNOTIACEAE								
....EUNOTIA	--	-	60	1	--	-	--	-
...FRAGILARIACEAE								
....SYNEDRA	--	-	--	-	--	-	--	-
...NAVICULACEAE								
....NAVICULA	--	-	180	2	--	-	*	0
...NITZSCHIACEAE								
....NITZSCHIA	160#	27	480	6	400	3	1000	2
.XANTHOPHYCEAE								
..HETEROCOCCALES								
...CHLOROTHECIACEAE								
....OPHIOCYTIUM	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	29	5	960	11	150	1	*	0
CYANOPHYTA (BLUE GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	--	-	--	-
....ANACYSTIS	--	-	1700#	21	4600#	40	4600	11
....COCCOCHLORIS	--	-	--	-	--	-	620	1
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	900	11	700	6	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	14	2	300	4	200	2	--	-
....TRACHELOMONAS	--	-	120	1	250	2	*	0
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	100	1	*	0
...PERIDINIACEAE								
....PERIDINIUM	14	2	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08164000 LAVACA RIVER NEAR EDNA, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	JUL 10,80	AUG 6,80	SEP 10,80
TIME	0955	1400	0940
TOTAL CELLS/ML	6500	8300	4000
DIVERSITY: DIVISION	1.4	1.4	1.8
.CLASS	1.4	1.4	1.8
..ORDER	1.8	2.0	2.4
...FAMILY	2.3	2.3	2.9
....GENUS	2.9	2.9	3.1

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHARACIACEAE						
....SCHROEDERIA	--	-	--	-	--	-
...COELASTRACEAE						
....COELASTRUM	--	-	--	-	--	-
...MICRACTINIACEAE						
....GOLENKINIA	--	-	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	2100#	32	760	9	400	10
....CHLORELLA	120	2	--	-	--	-
....CHODATELLA	83	1	--	-	79	2
....DICTYOSPHAERIUM	--	-	--	-	--	-
....KIRCHNERIELLA	170	3	--	-	120	3
....OOCYSTIS	--	-	--	-	--	-
....SELENASTRUM	42	1	150	2	--	-
....TETRAEDRON	42	1	91	1	--	-
....WESTELLA	--	-	--	-	--	-
...SCENEDESMACEAE						
....ACTINASTRUM	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	--	-
....SCENEDESMUS	1000#	15	1900#	23	930#	23
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CARTERIA	--	-	--	-	*	0
....CHLAMYDOMONAS	620	10	120	1	40	1
..ZYGNEMATALES						
...DESMIDIACEAE						
....STAURASTRUM	--	-	--	-	60	1
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	83	1	60	1	60	1
....MELOSIRA	--	-	--	-	--	-
....STEPHANODISCUS	--	-	--	-	--	-
..PENNALES						
...EUNOTIACEAE						
....EUNOTIA	--	-	--	-	--	-
...FRAGILARIACEAE						
....SYNEDRA	--	-	--	-	40	1
...NAVICULACEAE						
....NAVICULA	83	1	--	-	60	1
...NITZSCHIACEAE						
....NITZSCHIA	420	6	270	3	660#	16
.XANTHOPHYCEAE						
..HETEROCOCCALES						
...CHLOROTHECIACEAE						
....OPHIOCYTIUM	--	-	60	1	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOCHRYSIDACEAE						
....CHROOMONAS	--	-	*	0	--	-
...CRYPTOMONADACEAE						
....CRYPTOMONAS	120	2	120	1	79	2
CYANOPHYTA (BLUE GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....AGMENELLUM	1300#	20	1900#	23	560	14
....ANACYSTIS	290	4	1500#	18	--	-
....COCCOCHLORIS	--	-	--	-	--	-
..HORMOGONALES						
...OSCILLATORIACEAE						
....OSCILLATORIA	--	-	1200	15	790#	20
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	--	-	60	1	99	2
....TRACHELOMONAS	42	1	*	0	--	-
PYRRHOPHYTA (FIRE ALGAE)						
.DINOPHYCEAE						
..PERIDINIALES						
...GLENODINIACEAE						
....GLENODINIUM	--	-	--	-	--	-
...PERIDINIACEAE						
....PERIDINIUM	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08164000 LAVACA RIVER NEAR EDNA, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	2031	730	429	2350	70	384	24	133	260
NOV.	1979	1480	757	445	1780	73	293	25	100	270
DEC.	1979	1831	784	460	2270	76	378	26	127	280
JAN.	1980	16085	281	166	7190	24	1050	10	440	100
FEB.	1980	6922	426	251	4690	39	720	15	277	150
MAR.	1980	2461	792	465	3090	77	515	26	171	290
APR.	1980	2087	746	438	2470	72	407	25	138	270
MAY	1980	26622	212	125	8970	18	1270	7.8	559	75
JUNE	1980	1782	667	392	1890	63	302	22	108	240
JULY	1980	931	714	419	1050	68	171	24	60	260
AUG.	1980	640	670	393	680	63	109	23	39	240
SEPT	1980	1148	579	340	1060	54	166	20	61	210
TOTAL		64020	**	**	37500	**	5760	**	2210	**
WTD. AVG.		175	369	217	**	33	**	13	**	130

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	644	698	803	700	645	755	828	729	500	690	672	825
2	670	746	800	731	670	770	650	739	580	645	650	805
3	679	755	803	819	700	756	446	745	660	685	628	782
4	695	766	782	783	720	765	560	760	621	710	606	776
5	709	769	780	770	717	771	630	730	625	740	645	694
6	715	744	790	750	739	770	700	764	631	675	697	517
7	720	746	802	733	765	767	779	857	645	713	750	650
8	728	756	805	785	600	781	789	680	665	799	765	708
9	734	767	804	795	225	778	771	658	683	819	650	427
10	748	770	803	793	221	775	774	675	717	796	630	624
11	753	772	807	792	316	774	814	685	720	747	604	652
12	757	774	785	795	358	781	800	690	712	720	609	778
13	750	772	775	800	400	786	790	650	721	686	630	760
14	755	780	770	796	486	792	780	648	725	750	645	725
15	758	778	730	800	557	795	779	676	728	777	661	686
16	753	788	740	807	600	800	813	550	724	767	670	717
17	746	785	780	803	650	805	815	350	715	697	675	712
18	755	780	800	743	683	799	816	450	706	700	680	704
19	757	777	792	765	700	819	823	107	707	675	756	701
20	760	770	784	600	725	800	830	100	665	695	592	710
21	763	765	793	133	736	824	840	238	655	683	613	720
22	765	760	798	226	748	825	822	300	670	726	634	724
23	768	745	805	253	760	823	800	224	681	719	654	730
24	771	725	803	304	770	820	780	310	715	714	675	735
25	766	715	800	335	778	826	794	390	743	661	696	740
26	768	724	802	400	785	825	813	420	721	645	745	738
27	694	709	771	450	792	824	815	474	704	650	740	550
28	733	785	811	492	789	804	798	543	715	659	734	450
29	776	780	800	572	774	790	800	500	720	665	687	515
30	730	790	785	574	---	780	810	333	725	723	730	350
31	718	---	715	605	---	820	---	400	---	719	765	---
MEAN	737	760	788	636	635	794	769	528	683	711	674	674

08164000 LAVACA RIVER NEAR EDNA, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				---	9.5	---	20.5	22.5	---	27.0		
2				---	---	---	22.0	25.5	---	24.0		
3				---	---	11.5	24.5	---	25.0	---		
4				---	15.0	17.0	---	---	24.0	---		
5				---	16.0	19.0	---	25.5	---	---		
6				---	15.0	---	---	26.5	26.0	---		
7				---	---	19.0	21.0	23.5	---	---		
8				---	11.0	21.0	23.0	---	---	---		
9				13.0	9.5	---	23.0	24.5	26.0	---		
10				---	---	21.0	23.0	---	27.0	---		
11				17.0	10.0	21.0	22.0	---	27.5	---		
12				---	9.5	22.0	---	26.0	27.5	---		
13				---	12.0	21.0	---	---	27.5	---		
14				19.0	13.0	19.5	20.0	24.5	---	---		
15				19.0	15.0	---	22.0	---	---	---		
16				19.0	---	---	22.0	24.0	28.0	---		
17				20.0	---	16.0	---	---	28.0	---		
18				20.0	11.0	17.0	23.5	---	28.0	---		
19				---	---	17.5	23.5	21.0	28.0	---		
20				---	17.5	19.0	---	23.0	28.5	---		
21				17.5	20.0	20.0	23.0	23.0	---	---		
22				15.0	20.5	---	22.5	23.0	---	---		
23				13.5	---	---	---	22.0	28.5	---		
24				13.0	---	20.0	---	---	28.5	---		
25				14.0	19.0	19.0	21.0	---	28.0	---		
26				---	16.0	---	20.0	---	29.0	---		
27				---	17.5	17.5	---	24.0	29.0	---		
28				16.0	18.5	20.0	23.5	24.0	---	---		
29				16.0	20.0	20.0	---	25.0	---	---		
30				17.0	---	---	---	24.5	29.0	---		
31				12.0	---	20.0	---	---	---	---		
MEAN				16.5	15.0	19.0	22.0	24.0	27.5	25.5		

08164300 NAVIDAD RIVER NEAR HALLETTSVILLE, TX

LOCATION.--Lat 29°28'00", long 96°48'45", Lavaca County, Hydrologic Unit 12100102, on right bank 28 ft (9 m) downstream from bridge on U.S. Highway 90-A, 0.8 mi (1.3 km) downstream from Hixons Creek, 1.2 mi (1.9 km) southwest of Sublime, and 8 mi (13 km) northeast of Hallettsville.

DRAINAGE AREA.--332 mi^2 (860 km^2).

PERIOD OF RECORD.--October 1961 to current year.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 159.28 ft (48.549 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. No known diversion above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--19 years, 159 ft^3/s (4.503 m^3/s), 6.50 in/yr (165 mm/yr), 115,200 acre-ft/yr (142 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,500 ft^3/s (1,520 m^3/s) Sept. 13, 1974, gage height, 36.05 ft (10.988 m); no flow Aug. 5-7, 22, Sept. 2-16, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1860, 40 ft (12.2 m) in June 1940; flood in July 1936 reached a stage of 39 ft (11.9 m), from information by local residents and Southern Pacific Railroad Co.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft^3/s (70.8 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Jan. 22	2200	3,060	86.7	19.68	5.998	May 20	1200	*3,520	99.7	21.20	6.462
May 16	1700	2,760	78.2	19.50	5.994	May 22	0300	2,710	76.7	19.79	6.032

Minimum discharge, 1.8 ft^3/s (0.051 m^3/s) Aug. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	20	23	40	60	77	45	24	65	17	6.0	3.8
2	19	18	23	36	59	72	43	321	60	17	5.5	3.0
3	18	17	23	35	60	53	43	96	56	16	5.2	5.4
4	17	16	23	64	61	50	40	45	53	15	5.0	11
5	15	16	24	42	59	47	36	33	49	15	5.6	5.7
6	15	16	25	37	55	43	36	29	47	14	5.2	4.6
7	15	16	24	35	53	43	37	28	45	14	5.6	11
8	16	17	24	32	120	43	39	33	42	13	5.0	19
9	16	18	23	31	473	42	36	33	76	13	4.5	14
10	14	18	23	32	184	42	34	28	296	12	8.5	11
11	13	16	25	33	106	40	34	26	92	11	6.4	9.1
12	14	16	33	32	82	40	34	26	58	9.4	5.9	7.4
13	15	16	121	31	72	38	41	26	46	8.8	5.2	6.5
14	15	16	62	30	67	35	46	66	41	7.7	4.4	5.8
15	15	17	43	31	65	35	38	499	38	6.7	4.3	5.5
16	15	18	36	31	62	37	34	2300	35	6.7	4.3	4.5
17	16	19	31	31	58	39	32	462	33	6.4	4.0	4.0
18	15	19	29	51	59	38	31	258	32	5.8	4.0	3.6
19	15	20	28	45	60	37	30	965	31	5.8	3.9	3.4
20	15	21	29	501	60	39	29	2810	29	5.6	3.8	3.1
21	16	31	30	986	57	38	28	1100	27	5.6	3.8	6.5
22	15	82	31	2250	52	35	28	1240	26	6.0	3.7	6.2
23	14	36	32	1060	50	35	27	206	26	6.2	3.1	4.6
24	14	28	32	185	47	36	27	152	24	5.8	2.8	3.8
25	14	26	34	125	44	35	35	125	23	6.0	2.7	3.6
26	14	25	32	100	42	36	47	108	22	5.7	2.8	4.0
27	14	24	31	84	41	62	31	96	20	5.2	2.5	6.2
28	14	23	30	74	41	291	27	125	19	5.2	2.1	8.4
29	15	21	60	69	42	105	25	169	19	5.2	2.5	7.3
30	16	20	114	68	---	61	24	81	18	5.2	2.6	11
31	20	---	53	65	---	50	---	71	---	6.4	2.6	---
TOTAL	479	666	1151	6266	2291	1674	1037	11581	1448	282.4	133.5	203.0
MEAN	15.5	22.2	37.1	202	79.0	54.0	34.6	374	48.3	9.11	4.31	6.77
MAX	20	82	121	2250	473	291	47	2810	296	17	8.5	19
MIN	13	16	23	30	41	35	24	24	18	5.2	2.1	3.0
CFSM	.05	.07	.11	.61	.24	.16	.10	1.13	.15	.03	.01	.02
IN.	.05	.07	.13	.70	.26	.19	.12	1.30	.16	.03	.01	.02
AC-FT	950	1320	2280	12430	4540	3320	2060	22970	2870	560	265	403

CAL YR 1979 TOTAL 119133.9 MEAN 326 MAX 14300 MIN 5.1 CFSM .98 IN 13.35 AC-FT 236300
WTR YR 1980 TOTAL 27211.9 MEAN 74.3 MAX 2810 MIN 2.1 CFSM .22 IN 3.05 AC-FT 53970

08164450 SANDY CREEK NEAR LOUISE, TX

LOCATION.--Lat 29°09'36", long 96°32'46", Jackson County, Hydrologic Unit 12100102, on left bank at downstream end of bridge on Farm Road 710, 0.9 mi (1.4 km) upstream from Goldenrod Creek, and 9.1 mi (14.6 km) northwest of Louise.

DRAINAGE AREA.--289 mi² (749 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is 59.72 ft (18.203 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good except those for period of no gage-height record, Feb. 28 to May 20, which are fair. Much of the low flow during the irrigation season (April to September) comes from drainage from ricefields irrigated by water originally diverted from the Colorado River. No known diversion above station. Recording rain gage located at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,000 ft³/s (396 m³/s) Sept. 14, 1978, gage height, 23.03 ft (7.020 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,820 ft³/s (250 m³/s) Jan. 21 at 1500 hours, gage height, 20.07 ft (6.117), no other peak above base of 1,500 ft³/s (42.5 m³/s); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	141	.06	7.3	30	2.4	4.0	.00	1.3	.00	7.4	12
2	51	108	.06	3.9	25	10	2.5	.00	1.1	.00	1.7	7.1
3	54	47	.03	3.8	20	40	70	.00	.17	.00	1.2	5.7
4	57	22	.03	1.8	18	18	14	50	.21	.00	.28	13
5	45	13	.03	.68	15	8.0	3.0	25	.10	.00	.02	16
6	32	9.4	.03	.06	13	3.5	.20	10	.01	.18	.00	29
7	22	7.2	.05	.06	11	2.0	.06	5.0	.00	4.9	.00	130
8	16	5.8	.06	.05	39	.40	.06	3.0	.00	24	32	289
9	12	4.7	.07	.06	844	.10	.06	90	.01	71	79	522
10	17	2.5	.11	.07	800	.00	.06	65	.09	119	88	597
11	16	1.4	.11	.05	279	.00	.06	45	.00	125	150	438
12	14	.63	11	.03	115	.00	.06	30	.00	139	204	336
13	17	.37	45	.03	66	.00	.06	20	.00	155	146	239
14	16	.35	6.5	.03	45	.00	.00	25	.00	142	72	140
15	12	.30	21	.03	34	.00	.00	30	.00	117	49	97
16	8.9	.29	11	.03	26	.00	.00	150	.00	164	30	72
17	8.0	.28	4.8	.05	22	.00	.00	520	.00	143	29	89
18	6.2	.35	2.1	.05	19	.00	.00	530	.00	103	23	91
19	8.3	.30	1.6	.03	17	.00	.00	980	.00	85	15	117
20	11	.30	.67	1070	15	.00	.00	1100	.00	68	3.1	217
21	14	.37	.03	7930	12	.00	.00	960	5.4	76	2.9	217
22	10	.27	.00	5400	9.9	.00	.00	684	40	90	.33	147
23	7.1	.19	.00	3250	8.4	.00	.00	342	13	105	.24	119
24	12	2.7	.00	1900	7.0	.00	.00	120	4.5	114	5.2	138
25	8.0	6.4	.00	1040	5.2	.00	.00	44	2.6	82	1.6	160
26	6.0	5.3	.00	550	4.2	.00	.00	14	1.0	49	.32	202
27	3.5	3.2	.00	269	3.2	.00	.00	3.2	.61	30	.01	261
28	3.2	1.8	.01	128	2.7	30	.00	1.2	.29	31	.00	363
29	2.6	.74	1.4	77	2.5	18	.00	.77	.19	30	.86	418
30	1.9	.18	2.3	58	---	11	.00	14	.01	27	2.2	393
31	49	---	9.5	39	---	7.0	---	4.3	---	17	4.6	---
TOTAL	601.7	386.32	117.55	21729.11	2508.1	150.40	94.12	5865.47	70.59	2111.08	948.96	5874.8
MEAN	19.4	12.9	3.79	701	86.5	4.85	3.14	189	2.35	68.1	30.6	196
MAX	61	141	45	7930	844	40	70	1100	40	164	204	597
MIN	1.9	.18	.00	.03	2.5	.00	.00	.00	.00	.00	.00	5.7
CFSM	.07	.05	.01	2.43	.30	.02	.01	.65	.008	.24	.11	.68
IN.	.08	.05	.02	2.80	.32	.02	.01	.75	.01	.27	.12	.76
AC-FT	1190	766	233	43100	4970	298	187	11630	140	4190	1880	11650

CAL YR 1979 TOTAL 113027.39 MEAN 310 MAX 6880 MIN .00 CFSM 1.07 IN 14.55 AC-FT 224200
WTR YR 1980 TOTAL 40458.20 MEAN 111 MAX 7930 MIN .00 CFSM .38 IN 5.21 AC-FT 80250

08164450 SANDY CREEK NEAR LOUISE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1977 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)
OCT 23...	1435	7.2	435	7.9	20.5	5.5	8.4	91	1.6	120	24
DEC 05...	1022	.03	370	7.2	11.0	4.2	7.9	71	2.5	110	23
JAN 16...	1036	.03	324	7.1	18.0	6.2	5.8	61	2.3	96	14
FEB 28...	1011	3.1	205	7.5	15.5	20	9.4	94	2.0	66	16
APR 08...	1115	.06	258	7.5	22.0	11	8.0	91	2.3	84	5
MAY 22...	1425	845	162	7.6	26.0	170	7.6	93	5.2	52	8
JUL 08...	1045	32	597	8.0	29.0	23	6.9	88	--	190	29
AUG 06...	1130	.01	660	8.1	30.0	10	9.5	125	4.5	220	41
SEP 23...	0922	115	457	8.0	26.5	.70	6.7	83	1.8	140	16

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
OCT 23...	33	9.8	34	1.3	4.5	120	0	12	65	.2	30
DEC 05...	33	7.5	27	1.1	5.2	110	0	15	46	.1	21
JAN 16...	29	5.8	25	1.1	4.9	100	0	9.4	42	.2	18
FEB 28...	19	4.4	13	.7	3.7	60	0	11	23	.1	12
APR 08...	26	4.6	15	.7	3.2	96	0	8.0	21	.0	19
MAY 22...	15	3.5	9.7	.6	3.8	54	0	7.9	15	.2	13
JUL 08...	51	14	55	1.8	1.8	190	0	21	83	.6	22
AUG 06...	59	18	45	1.3	7.0	220	0	24	93	.4	26
SEP 23...	31	15	32	1.2	4.6	150	0	11	60	.4	37

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 23...	248	10	.14	.00	.14	.00	1.3	1.3	.140	12
DEC 05...	209	6	.03	.00	.03	.10	.70	.80	.090	13
JAN 16...	185	12	.00	.02	.01	.02	1.1	1.1	.160	6.6
FEB 28...	116	10	.00	.01	.01	.01	1.4	1.4	.060	27
APR 08...	145	17	.49	.03	.52	.04	.92	.96	.120	6.9
MAY 22...	95	289	.16	.05	.21	.13	1.6	1.7	.210	23
JUL 08...	342	19	.08	.01	.09	.10	1.5	1.6	.100	8.6
AUG 06...	381	35	.00	.01	.00	.07	2.3	2.4	.190	15
SEP 23...	265	28	.02	.00	.02	.00	1.3	1.3	.110	13

08164450 SANDY CREEK NEAR LOUISE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT 23...	1435	3	100	<1	0	0	60
JAN 16...	1036	2	100	<1	0	0	580
APR 08...	1115	1	100	1	0	0	270
AUG 06...	1130	4	100	2	0	1	70

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 23...	0	50	.0	0	0	7
JAN 16...	2	480	.1	0	0	<3
APR 08...	2	580	.7	0	0	6
AUG 06...	1	350	.1	0	0	8

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JAN 06...	1036	.0	0	.00	.00	.0	.00	.00	.00	.00

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JAN 06...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 06...	.00	.00	.00	.00	0	.00	.00	.00	.00

08164500 NAVIDAD RIVER NEAR GANADO, TX

LOCATION.--Lat 29°01'32", long 96°33'08", Jackson County, Hydrologic Unit 12100102, at downstream side near center of upstream bridge of two bridges on U.S. Highway 59, 170 ft (52 m) upstream from Texas and New Orleans Railroad Co. bridge, 0.2 mi (0.3 km) downstream from Sandy Creek, and 2.5 mi (4.0 km) southwest of Ganado.

DRAINAGE AREA.--1,062 mi^2 (2,751 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1939 to May 1980 (discontinued).

REVISED RECORDS.--WRD TX-73-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 13.62 ft (4.151 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to May 7, 1958, nonrecording gage at site 70 ft (21 m) downstream at same datum. Mar. 7, 1958, to Mar. 22, 1961, nonrecording gages at same site and datum.

REMARKS.--Water-discharge records good. Numerous diversions for irrigation above station. Much of low flow during the April to September irrigation season comes from Sandy Creek; see station 08164450 for water-discharge records during the current year. This low flow is drainage from ricefields irrigated by water originally diverted from the Colorado River.

AVERAGE DISCHARGE.--40 years (water years 1939-79), 572 ft^3/s (16.20 m^3/s), 414,400 acre-ft/yr (511 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 88,000 ft^3/s (2,490 m^3/s) June 15, 1973, gage height, 39.8 ft (12.13 m); no flow at times in 1955-56, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1876, 39.8 ft (12.13 m) May 27, 1936, and June 15, 1973, from information by local resident, Texas and New Orleans Railroad Co., and State Department of Highways and Public Transportation; discharge, 94,000 ft^3/s (2,660 m^3/s) May 27, 1936, from rating curve extended above 57,000 ft^3/s (1,610 m^3/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period October to May, 20,500 ft^3/s (581 m^3/s) Jan. 22 at 0700 hours, gage height, 28.78 ft (8.772 m); minimum daily, 2.2 ft^3/s (0.62 m^3/s) Nov. 22, 23.

DISCHARGE, IN CUBIC FEET PER SECOND, OCTOBER 1979 TO MAY 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	236	181	28	91	163	63	79	61				
2	195	165	32	68	150	76	101	64				
3	181	106	35	68	143	141	154	105				
4	173	94	34	69	137	100	92	178				
5	160	143	33	56	131	80	66	96				
6	143	122	32	61	125	72	60	72				
7	122	74	31	55	120	69	61	64				
8	110	44	32	49	220	65	59	66				
9	101	36	32	47	1880	61	60	144				
10	94	32	32	47	1830	61	63	181				
11	92	43	32	45	720	61	58	131				
12	87	61	43	43	308	59	57	84				
13	88	56	88	42	202	58	59	66				
14	84	48	107	41	159	57	68	60				
15	76	41	111	40	135	55	59	80				
16	69	31	85	40	115	56	66	888				
17	64	28	65	38	103	55	58	2940				
18	58	28	56	41	98	53	57	3000				
19	58	25	49	41	94	51	61	7280				
20	61	23	45	408	93	52	60	7810				
21	66	23	42	11100	89	52	59	4930				
22	68	22	41	17300	85	51	56	---				
23	58	22	40	10900	81	54	67	---				
24	53	43	41	6250	75	55	64	---				
25	53	49	41	2360	70	54	60	---				
26	48	40	41	1110	66	59	52	---				
27	45	37	41	634	67	61	54	---				
28	41	35	42	374	63	62	69	---				
29	41	34	53	262	62	136	64	---				
30	42	30	64	218	---	178	61	---				
31	92	---	75	187	---	110	---	---				
TOTAL	2859	1716	1523	52085	7584	2217	2004	---				
MEAN	92.2	57.2	49.1	1680	262	71.5	66.8	---				
MAX	236	181	111	17300	1880	178	154	---				
MIN	41	22	28	38	62	51	52	---				
AC-FT	5670	3400	3020	103300	15040	4400	3970	---				

CAL YR 1979 TOTAL 388514 MEAN 1064 MAX 19600 MIN 22 AC-FT 770600
WTR YR 1980 TOTAL - MEAN - MAX - MIN - AC-FT -

08164500 NAVIDAD RIVER NEAR GANADO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1959 to May 1980 (discontinued). Chemical, biochemical, and pesticide analyses: January 1968 to May 1980 (discontinued). Sediment records: October 1974 to May 1980 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1959 to May 1980 (discontinued).
WATER TEMPERATURES: October 1959 to May 1980 (discontinued).

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,350 micromhos Oct. 26, 28, 1963; minimum daily, 44 micromhos Mar. 24, 25, 1973.
WATER TEMPERATURES (1959-73): Maximum daily, 37.0°C July 21, 27, 28, 1962, Aug. 19, 1969; minimum daily, 0.0°C Jan. 9-11, 1962, Feb. 22, 1963.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 863 micromhos Apr. 21, 25, May 1; minimum daily, 83 micromhos Jan. 22.

WATER QUALITY DATA, OCTOBER 1979 TO MAY 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)
NOV												
08...	1205	46	635	8.0	18.5	30	7.2	9.7	102	2.9	200	0
DEC												
06...	1418	31	782	--	14.5	--	--	--	--	--	270	3
JAN												
16...	1045	38	769	8.2	18.0	10	5.4	9.0	94	2.7	270	0
MAR												
11...	0940	59	765	8.1	21.0	10	14	8.1	91	1.4	270	16
APR												
09...	1706	60	827	--	24.5	--	--	--	--	--	260	3
MAY												
07...	1012	65	662	8.1	24.5	30	36	7.5	89	2.8	180	0

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
NOV											
08...	71	5.8	50	1.5	4.4	260	0	21	68	.3	22
DEC											
06...	100	5.8	50	1.3	3.1	330	0	21	78	.3	24
JAN											
16...	100	5.0	53	1.4	2.7	330	0	22	80	.3	18
MAR											
11...	99	5.6	61	1.6	2.8	310	0	21	78	.3	16
APR											
09...	92	6.7	64	1.7	3.7	310	0	25	95	.5	21
MAY											
07...	62	5.8	65	2.1	4.7	220	0	28	86	.4	18

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
NOV											
08...	371	13	5	.04	.010	.05	.040	.68	.72	.040	8.2
DEC											
06...	445	--	--	--	--	--	--	--	--	--	--
JAN											
16...	444	16	3	.03	.020	.05	.020	.90	.92	.100	3.6
MAR											
11...	437	26	15	.03	.000	.03	.000	.32	.32	.050	3.6
APR											
09...	461	--	--	--	--	--	--	--	--	--	--
MAY											
07...	379	102	20	.49	.030	.52	.130	1.3	1.4	.860	9.5

08164500 NAVIDAD RIVER NEAR CANADO, TX--Continued

WATER QUALITY DATA, OCTOBER 1979 TO MAY 1980

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
NOV 08...	1205	3	200	<1	0	0	80
JAN 16...	1045	3	300	<1	0	0	<10
MAY 07...	1012	4	200	<1	0	2	10

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV 08...	0	40	.0	0	0	6
JAN 16...	1	30	.3	0	0	4
MAY 07...	0	10	.1	1	0	<3

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	CHLOR-DANE, TOTAL (UG/L)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
JAN 16...	1045	.0	0	.00	.00	.0	.0	0	.00	.0

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
JAN 16...	.00	.0	.00	.0	.00	.00	.0	.00	.00	.0

DATE	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)
JAN 16...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 16...	.00	.00	.00	.00	0	0	.00	.00	.00	.00

08164500 NAVIDAD RIVER NEAR GANADO, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO MAY 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	2859	542	318	2450	58	451	17	134	180
NOV.	1979	1716	649	380	1760	72	335	19	89	220
DEC.	1979	1523	652	381	1570	73	299	19	79	220
JAN.	1980	52085	190	112	15700	19	2620	7.4	1050	63
FEB.	1980	7584	309	181	3720	31	644	11	231	100
MAR.	1980	2217	632	370	2210	71	424	18	110	210
APR.	1980	2004	761	444	2400	88	477	20	108	250
MAY	1980	28300	181	107	8150	17	1340	7.3	560	60
TOTAL		98288	**	**	38000	**	6590	**	2360	**
WTD. AVG.		420	243	143	**	25	**	8.9	**	81

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), OCTOBER 1979 TO MAY 1980 ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	404	576	605	680	505	740	793	863				
2	434	595	600	676	500	610	628	839				
3	540	615	592	774	490	412	590	550				
4	408	630	590	767	480	497	650	510				
5	424	649	650	760	471	568	710	562				
6	500	572	782	750	495	598	760	575				
7	575	646	744	754	530	660	821	662				
8	631	635	705	750	450	680	813	611				
9	545	608	666	725	185	700	827	632				
10	570	650	628	750	200	712	820	475				
11	606	680	640	771	210	765	758	540				
12	576	708	632	780	213	748	790	618				
13	595	710	617	785	253	720	820	645				
14	625	773	602	777	303	704	850	675				
15	647	754	590	770	301	710	826	620				
16	631	718	595	769	384	720	860	450				
17	600	712	602	777	465	730	840	170				
18	571	710	610	790	550	717	834	150				
19	638	707	669	805	631	756	845	130				
20	610	713	654	650	627	768	852	127				
21	600	725	674	313	630	828	863	196				
22	573	740	680	83	635	800	818	---				
23	635	760	695	93	610	775	825	---				
24	790	720	690	175	590	752	830	---				
25	647	710	685	260	578	748	863	---				
26	620	712	683	340	744	800	750	---				
27	600	710	680	470	641	829	610	---				
28	590	626	772	543	700	766	595	---				
29	575	600	730	549	763	470	564	---				
30	494	587	700	535	---	380	840	---				
31	525	---	690	523	---	401	---	---				
MEAN	574	675	660	611	487	679	775	505				

08164500 NAVIDAD RIVER NEAR GANADO, TX--Continued

TEMPERATURE, WATER (DEG. C), OCTOBER 1979 TO MAY 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.5	16.5	---	---	14.5	---	17.0	21.5				
2	23.5	15.5	---	9.0	---	---	16.5	21.5				
3	23.5	---	8.5	9.0	---	7.0	17.0	---				
4	23.5	---	9.0	9.0	13.0	12.0	---	---				
5	20.5	17.0	9.5	---	13.0	15.0	---	22.0				
6	---	18.5	9.0	---	14.0	13.5	---	22.0				
7	---	17.0	8.5	12.0	15.5	15.5	17.0	23.0				
8	23.5	15.5	---	10.0	16.5	---	17.0	22.0				
9	23.5	16.0	---	9.5	---	---	18.0	20.0				
10	23.0	---	13.0	9.0	---	17.0	17.0	---				
11	23.5	---	14.5	9.5	9.0	18.0	21.0	---				
12	23.0	15.5	---	---	9.0	17.0	---	21.5				
13	---	14.5	10.5	---	13.5	17.0	---	22.0				
14	---	13.5	11.0	15.5	13.0	16.0	12.0	21.5				
15	23.5	12.0	12.0	16.0	14.5	---	13.5	22.0				
16	23.5	12.0	---	19.5	---	---	16.0	23.0				
17	23.5	---	7.0	19.0	---	20.0	17.0	---				
18	23.5	---	5.5	18.5	14.5	18.5	18.5	---				
19	23.5	11.0	5.0	---	15.0	14.5	---	23.5				
20	---	11.5	5.0	---	15.5	16.0	---	24.5				
21	---	---	5.5	12.0	15.0	16.5	20.0	24.0				
22	23.5	---	---	12.0	15.5	---	19.5	---				
23	23.5	---	---	13.5	---	---	19.0	---				
24	23.0	---	---	13.5	---	17.0	20.0	---				
25	21.5	---	---	14.0	16.5	15.5	21.0	---				
26	21.0	10.0	9.0	---	15.5	16.5	---	---				
27	---	10.5	9.0	---	14.5	16.0	---	---				
28	---	10.0	9.0	14.5	14.5	17.0	21.0	---				
29	20.0	9.0	---	13.0	15.0	---	20.5	---				
30	20.0	9.0	---	13.5	---	---	21.0	---				
31	18.5	---	---	14.5	---	17.0	---	---				
MEAN	22.5	13.5	9.0	13.0	14.0	16.0	18.0	---				

08164503 WEST MUSTANG CREEK NEAR GANADO, TX

LOCATION.--Lat 29°04'17", long 96°28'01", Jackson County, Hydrologic Unit 12100102, on right bank at downstream end of downstream bridge on U.S. Highway 59, 2.1 mi (3.4 km) upstream from Middle Mustang Creek, and 3.6 mi (5.8 km) east of Ganado.

DRAINAGE AREA.--178 mi² (461 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is 39.67 ft (12.091 m) National Geodetic Vertical Datum of 1929 (levels by Water and Power Resources Service).

REMARKS.--Water-discharge records good. Much of low flow during irrigation season (April to September) comes from drainage from ricefields irrigated by water originally diverted from the Colorado River.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,400 ft³/s (379 m³/s) Jan. 21, 1980, gage height, 24.49 ft (7.465 m), from floodmark; minimum, 0.15 ft³/s (0.004 m³/s) Jan. 11, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42.5 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Jan. 21	1600	*13,400	379	24.49	7.465
May 20	0200	2,420	68.5	14.91	4.545

Minimum discharge, 0.30 ft³/s (0.008 m³/s) Dec. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78	82	1.3	33	19	1.5	9.6	16	8.9	10	57	19
2	69	87	1.1	16	14	1.0	6.8	38	8.5	7.9	36	18
3	55	67	.81	28	13	25	57	62	9.1	11	20	9.2
4	46	61	.59	44	10	18	31	41	8.9	12	20	11
5	41	48	.49	13	9.3	8.0	10	24	9.7	18	13	11
6	38	37	.38	6.9	8.0	4.8	4.6	12	11	23	21	30
7	37	25	2.1	4.7	6.8	3.6	5.5	13	9.9	16	34	53
8	37	15	1.2	3.5	137	2.7	10	18	7.5	30	74	97
9	33	20	.52	2.6	994	2.2	26	132	5.9	64	97	268
10	32	14	.36	2.1	442	1.9	12	124	5.1	96	96	359
11	33	8.3	.31	1.8	161	1.6	7.6	76	5.0	107	137	294
12	39	5.2	241	1.2	75	1.3	8.5	57	4.6	114	140	184
13	35	4.1	866	.99	50	.99	15	41	4.0	108	105	131
14	34	3.8	429	.97	34	.71	26	26	3.8	105	66	101
15	35	2.9	127	1.0	21	.63	17	33	4.6	105	41	79
16	27	2.7	78	.88	14	.77	16	152	4.8	95	26	89
17	20	2.2	51	2.4	11	.90	9.9	353	3.6	99	16	76
18	20	1.6	29	2.9	10	.95	5.2	519	5.8	83	10	59
19	32	.95	15	1.6	9.3	1.0	7.0	1880	3.7	90	4.9	63
20	28	.88	11	533	7.6	.97	11	2240	3.1	86	4.6	78
21	21	.94	7.7	11100	5.0	.64	17	1220	5.3	88	3.4	107
22	18	1.3	5.6	8520	3.6	.53	27	585	103	78	5.7	90
23	16	3.3	4.9	3970	3.0	1.8	46	188	115	99	2.9	80
24	13	2.2	4.3	1820	2.7	.97	40	83	71	94	6.0	81
25	11	4.2	3.4	537	2.4	2.2	20	47	49	72	12	83
26	9.8	5.6	2.6	236	1.8	5.7	37	28	36	60	7.9	108
27	9.4	6.1	2.0	146	1.6	15	21	16	25	53	9.1	186
28	8.2	4.4	1.7	100	1.5	41	23	11	17	48	11	301
29	9.4	2.7	21	76	1.3	39	14	7.6	17	62	11	309
30	7.8	1.8	77	58	---	60	14	9.0	13	70	14	399
31	23	---	57	35	---	25	---	17	---	56	14	---
TOTAL	915.6	521.17	2043.36	27298.54	2068.9	270.36	554.7	8068.6	578.8	2059.9	1115.5	3773.2
MEAN	29.5	17.4	65.9	881	71.3	8.72	18.5	260	19.3	66.4	36.0	126
MAX	78	87	866	11100	994	60	57	2240	115	114	140	399
MIN	7.8	.88	.31	.88	1.3	.53	4.6	7.6	3.1	7.9	2.9	9.2
CFSM	.17	.10	.37	4.95	.40	.05	.10	1.46	.11	.37	.20	.71
IN.	.19	.11	.43	5.71	.43	.06	.12	1.69	.12	.43	.23	.79
AC-FT	1820	1030	4050	54150	4100	536	1100	16000	1150	4090	2210	7480

CAL YR 1979 TOTAL 95371.66 MEAN 261 MAX 7740 MIN .31 CFSM 1.47 IN 19.93 AC-FT 189200
WTR YR 1980 TOTAL 49268.63 MEAN 135 MAX 11100 MIN .31 CFSM .76 IN 10.30 AC-FT 97720

LAVACA RIVER BASIN

08164503 WEST MUSTANG CREEK NEAR GANADO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1977 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)
OCT 23...	1050	16	660	7.9	19.5	9.5	6.8	74	2.1	190	43
DEC 04...	1148	.57	758	8.0	10.5	2.5	8.8	91	1.9	210	33
JAN 15...	1235	1.0	485	7.8	16.5	92	8.0	82	2.1	140	36
FEB 26...	1046	2.0	479	7.9	13.0	32	8.8	81	3.7	170	44
APR 09...	1051	33	736	7.7	18.5	72	8.2	85	3.7	230	100
MAY 22...	1150	630	215	7.6	26.0	130	6.1	74	4.7	66	20
JUL 08...	0935	42	653	7.8	28.5	19	5.5	70	--	210	45
AUG 06...	0900	20	800	7.9	27.5	21	4.5	56	4.4	260	58
SEP 23...	1233	81	574	7.9	28.5	1.1	5.8	73	2.4	170	23

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
OCT 23...	58	11	54	1.7	5.2	180	0	15	110	.3	41
DEC 04...	64	13	70	2.1	7.0	220	0	31	110	.3	19
JAN 15...	44	7.9	39	1.4	5.1	130	0	31	64	.2	15
FEB 26...	52	9.1	35	1.2	4.3	150	0	30	59	.2	15
APR 09...	71	12	55	1.6	7.5	150	0	41	120	.2	19
MAY 22...	20	3.8	13	.7	3.4	56	0	15	23	.2	14
JUL 08...	68	9.5	56	1.7	1.0	200	0	17	98	.5	34
AUG 06...	74	17	61	1.7	7.1	240	0	38	120	.5	44
SEP 23...	45	13	46	1.6	6.4	160	0	13	92	.4	52

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 23...	384	20	.02	.00	.02	.06	1.2	1.3	.140	13
DEC 04...	423	12	.04	.00	.04	.02	.80	.82	.080	12
JAN 15...	270	62	.13	.02	.15	.03	1.4	1.4	.200	11
FEB 26...	279	43	.01	.01	.02	.03	.02	.05	.110	11
APR 09...	400	129	.30	.05	.35	.28	1.1	1.4	.260	13
MAY 22...	120	118	.48	.06	.54	.17	1.3	1.5	.280	--
JUL 08...	383	32	.04	.01	.05	.05	1.1	1.1	.070	6.8
AUG 06...	480	47	.10	.03	.13	.06	1.1	1.2	.240	18
SEP 23...	340	55	.00	.00	.00	.00	1.4	1.4	.010	19

08164503 WEST MUSTANG CREEK NEAR GANADO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
OCT 23...	1050	4	200	<1	0	0	60
JAN 15...	1235	2	100	<1	0	0	20
APR 09...	1051	2	200	<1	0	2	20
AUG 06...	0900	7	200	1	0	2	90

DATE	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 23...	0	20	.1	0	0	10
JAN 15...	4	30	.3	0	0	<3
APR 09...	0	20	.6	1	0	9
AUG 06...	4	20	.1	0	0	4

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	CHLORDANE, TOTAL (UG/L)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG)
JAN 15...	1235	.0	1	.00	.00	--	.0	--	.00	--
AUG 06...	0900	.0	0	.00	.00	.0	.0	0	.00	1.4

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)
JAN 15...	.00	--	.00	--	.00	.00	--	.00	.00	--
AUG 06...	.00	6.1	.00	.0	.00	.00	.1	.00	.00	.0

DATE	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG)
JAN 15...	.00	.00	--	.00	--	.00	--	.00	.00	--
AUG 06...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 15...	.00	.00	.00	.00	0	--	.00	.00	.00	.00
AUG 06...	.00	.00	.00	.00	0	0	.00	.00	.00	.00

08164600 GARCITAS CREEK NEAR INEZ, TX

LOCATION.--Lat 28°53'28", long 96°49'08", Victoria County, Hydrologic Unit 12100402, at right downstream end of bridge on U.S. Highway 59 access road, 0.3 mi (0.5 km) upstream from Southern Pacific Railroad bridge, 2.0 mi (3.2 km) southwest of Inez, and 3.6 mi (5.8 km) upstream from Casa Blanca Creek.

DRAINAGE AREA.--91.7 mi² (238 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1970 to current year.

GAGE.--Water-stage recorder. Datum of gage is 29.16 ft (8.888 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. No known diversion above station. An undetermined amount of return water from irrigation enters stream above station. Recording rain gage at station.

AVERAGE DISCHARGE.--10 years (water years 1971-80), 57.3 ft³/s (1.623 m³/s), 8.49 in/yr (216 mm/yr), 41,510 acre-ft/yr (51.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,000 ft³/s (481 m³/s) Sept. 14, 1978, gage height, 27.85 ft (8.489 m); no flow May 22, 23, May 26 to June 17, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage during period 1903-70, 24.5 ft (7.47 m) Oct. 26, 1960. In 1929, a flood nearly as high as the 1960 flood occurred, and a flood in September 1967 reached a stage of 23.4 ft (7.13 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42.5 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Jan. 21	1800	2,640	74.8	17.72	5.401
May 19	1600	*8,710	247	24.54	7.480

Minimum discharge, 0.24 ft³/s (0.007 m³/s) Aug. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	7.0	3.0	5.5	16	7.6	3.5	2.1	11	1.6	1.0	.39
2	20	6.1	2.9	5.2	13	5.5	3.5	2.1	10	1.6	.75	.53
3	18	5.7	2.9	4.8	13	5.2	3.4	2.4	9.1	1.5	.83	.78
4	16	5.2	2.9	4.1	12	5.2	3.2	2.2	8.2	1.4	.75	.94
5	14	5.2	2.9	3.9	11	5.0	3.0	2.2	7.5	1.4	.67	1.7
6	13	5.2	3.0	3.5	10	4.8	3.0	2.0	7.0	1.3	.67	4.1
7	13	5.0	2.9	3.4	10	4.8	3.1	2.2	6.4	1.4	2.2	4.7
8	13	5.0	3.0	3.4	19	4.8	3.0	5.7	6.0	1.9	1.5	4.2
9	12	4.8	2.9	3.4	144	4.6	2.7	11	5.7	1.3	1.2	5.1
10	11	4.4	2.9	3.2	97	4.6	2.7	6.9	5.4	1.3	3.9	4.3
11	10	4.4	3.2	3.3	42	4.6	2.8	4.0	5.2	1.2	5.2	3.1
12	9.9	4.4	4.0	3.2	26	4.6	2.9	2.9	4.8	1.1	3.7	2.5
13	9.9	4.4	3.9	3.2	19	4.2	4.5	2.3	4.6	1.0	2.9	2.0
14	9.6	4.2	3.5	3.2	16	4.1	3.4	2.2	4.6	.92	2.2	1.5
15	8.8	4.2	3.4	3.2	14	4.1	2.9	2.2	4.2	.92	2.0	1.4
16	8.8	4.2	3.3	3.2	11	4.4	2.7	34	4.2	.92	1.9	1.2
17	8.6	4.1	2.9	3.2	9.9	5.2	3.1	24	4.1	1.1	2.0	1.2
18	8.3	4.2	2.9	3.0	9.4	4.2	3.8	168	3.9	1.0	1.6	1.1
19	8.3	4.2	2.9	3.0	8.6	4.2	3.4	6400	3.5	.83	1.4	.88
20	8.3	4.2	2.9	29	8.3	4.2	4.3	2050	3.5	.75	1.0	.74
21	8.3	4.4	3.0	1960	8.0	3.9	3.5	341	3.5	1.2	.82	.65
22	8.0	4.6	3.3	1170	7.3	3.9	4.2	164	3.4	2.2	.72	.52
23	7.3	4.4	3.4	286	6.8	3.9	5.7	84	2.7	3.0	.57	.46
24	7.1	3.9	3.3	138	6.4	3.9	3.7	50	2.6	1.9	.45	1.1
25	7.1	3.9	3.0	83	5.7	3.7	3.2	35	2.4	1.4	.40	.82
26	6.8	3.7	3.0	56	5.5	4.1	3.2	29	2.3	1.1	.33	7.6
27	6.6	3.5	3.0	38	5.2	4.2	4.0	23	2.0	.92	.28	35
28	6.4	3.4	3.2	29	5.2	4.1	3.3	19	1.9	.92	.35	37
29	6.3	3.0	14	22	5.5	4.8	2.3	17	1.9	1.1	.43	17
30	9.9	3.0	11	20	---	4.6	2.1	14	1.8	4.1	.45	62
31	11	---	6.9	16	---	3.7	---	13	---	1.6	.42	---
TOTAL	328.3	133.9	119.3	3917.9	562.8	140.7	100.1	9517.4	143.4	43.88	42.59	204.51
MEAN	10.6	4.46	3.85	126	19.4	4.54	3.34	307	4.78	1.42	1.37	6.82
MAX	23	7.0	14	1960	144	7.6	5.7	6400	11	4.1	5.2	62
MIN	6.3	3.0	2.9	3.0	5.2	3.7	2.1	2.0	1.8	.75	.28	.39
CFSM	.12	.05	.04	1.37	.21	.05	.04	3.35	.05	.02	.02	.07
IN.	.13	.05	.05	1.59	.23	.06	.04	3.86	.06	.02	.02	.08
AC-FT	651	266	237	7770	1120	279	199	18880	284	87	84	406

CAL YR 1979 TOTAL 42316.90 MEAN 116 MAX 6990 MIN 2.0 CFSM 1.27 IN 17.17 AC-FT 83940
WTR YR 1980 TOTAL 15234.78 MEAN 41.7 MAX 6400 MIN .28 CFSM .46 IN 6.19 AC-FT 30260

08164600 GARCITAS CREEK NEAR INEZ, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)
OCT 22...	1622	8.3	697	8.1	25.0	3.5	8.2	98	1.5	280	30
DEC 03...	1604	2.9	725	8.2	13.0	.70	11.2	105	1.2	290	37
JAN 14...	1523	3.2	712	8.3	18.5	3.2	10.6	113	1.4	280	39
FEB 25...	1432	3.9	605	8.1	19.5	7.5	9.3	99	1.2	240	37
APR 07...	1426	3.2	720	8.2	23.0	2.9	8.9	103	1.5	280	39
MAY 21...	1101	340	110	7.7	26.0	48	6.4	78	3.9	41	0
JUL 08...	1205	1.9	613	8.1	33.0	5.7	7.7	105	--	220	44
AUG 07...	0900	.67	670	7.4	28.0	2.6	5.9	75	2.0	190	11
SEP 23...	1520	.47	656	8.4	31.0	.25	9.3	124	2.0	170	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
OCT 22...	94	10	38	1.0	1.6	300	0	52	46	.3	35
DEC 03...	97	12	44	1.1	1.2	310	0	54	48	.3	33
JAN 14...	91	12	48	1.3	1.6	290	0	56	59	.3	27
FEB 25...	81	9.7	33	.9	1.6	250	0	40	45	.2	25
APR 07...	91	12	50	1.3	1.4	290	0	46	64	.2	27
MAY 21...	13	2.1	5.7	.4	2.8	50	0	4.2	6.0	.1	11
JUL 08...	70	12	46	1.3	1.6	220	0	56	53	.5	38
AUG 07...	57	12	62	1.9	2.2	220	0	50	78	.4	37
SEP 23...	48	11	71	2.4	3.4	200	4	30	88	.4	41

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 22...	425	14	.00	.00	.00	.00	.88	.88	.020	5.2
DEC 03...	442	3	.11	.00	.11	.01	.43	.44	.010	15
JAN 14...	438	8	.00	.02	.01	.01	.88	.89	.020	5.3
FEB 25...	359	7	.00	.01	.01	.01	.29	.30	.020	5.5
APR 07...	435	3	1.6	.02	1.6	.08	.32	.40	.010	5.3
MAY 21...	70	39	.01	.00	.01	.04	.96	1.0	.090	17
JUL 08...	386	12	.00	.00	.00	.05	1.5	1.5	.020	9.6
AUG 07...	407	2	.00	.00	.00	.01	.55	.56	.020	6.8
SEP 23...	395	0	.00	.00	.00	.00	.85	.85	.010	8.5

08164600 GARCITAS CREEK NEAR INEZ, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT 22...	1622	3	300	<1	0	0	10
JAN 14...	1523	2	200	<1	0	0	20
APR 07...	1426	2	200	<1	10	2	<10
AUG 07...	0900	5	200	<1	0	0	20

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 22...	0	20	.0	1	0	8
JAN 14...	8	20	.1	1	0	4
APR 07...	1	20	.6	1	0	<3
AUG 07...	1	30	.1	0	0	4

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	CHLOR-DANE, TOTAL (UG/L)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
JAN 14...	1523	.0	1	.00	.00	--	.0	--	.00	--	.00	--
AUG 06...	1130	.0	0	.00	.00	.0	.0	0	.00	.0	.00	.0
07...	0900	.0	0	.00	.00	.0	.0	0	.00	.0	.00	.0

DATE	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-AZINON, TOTAL (UG/L)	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-ELDRIN TOTAL (UG/L)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ETHION, TOTAL (UG/L)	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	HEPTA-CHLOR, TOTAL (UG/L)
JAN 14...	.00	--	.00	--	.00	--	.00	.00	--	.00	--	.00
AUG 06...	.00	.0	.00	--	.00	.0	.00	.00	.0	.00	--	.00
07...	.00	.0	.00	.0	.00	.0	.00	.00	.0	.00	.0	.00

DATE	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	MALA-THION, TOTAL (UG/L)	MALA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	METH-OXY-CHLOR, TOTAL (UG/L)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARA-THION, TOTAL (UG/L)	METHYL PARA-THION, TOT. IN BOTTOM MATL. (UG/KG)	METHYL TRI-THION, TOTAL (UG/L)
JAN 14...	--	.00	--	.00	--	.00	--	.00	--	.00	--	.00
AUG 06...	.0	.00	.0	.00	.0	.00	--	.00	.0	.00	--	.00
07...	.0	.00	.0	.00	.0	.00	.0	.00	.0	.00	.0	.00

DATE	METHYL TRI-THION, TOT. IN BOTTOM MATL. (UG/KG)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PARA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	TOX-APHENE, TOTAL (UG/L)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	TOTAL TRI-THION (UG/L)	TRI-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 14...	--	.00	.00	--	0	--	.00	--	.00	.00	.00
AUG 06...	--	.00	.00	--	0	0	.00	--	.00	.00	.00
07...	.0	.00	.00	.0	0	0	.00	.0	--	--	--

08164800 PLACEDO CREEK NEAR PLACEDO, TX

LOCATION.--Lat 28°43'30", long 96°46'07", Victoria County, Hydrologic Unit 12100401, on right bank at downstream end of bridge on Farm Road 616, 0.1 mi (0.2 km) downstream from confluence of Lone Tree Creek and Arroyo Palo Alto, 1.2 mi (1.9 km) upstream from Ninemile Creek, and 4.4 mi (7.1 km) northeast of Placedo.

DRAINAGE AREA.--68.3 mi² (177 km²).

PERIOD OF RECORD.--June 1970 to current year.

GAGE.--Water-stage recorder. Datum of gage is 5.58 ft (1.701 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. No known diversion above station. Recording rain gage at station.

AVERAGE DISCHARGE.--10 years, 66.5 ft³/s (1.883 m³/s), 48,180 acre-ft/yr (59.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,100 ft³/s (428 m³/s) Sept. 14, 1978, gage height, 29.64 ft (9.034 m); no flow Sept. 8, 9, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1930, 31.9 ft (9.72 m) in September 1967 and 30.4 ft (9.27 m) in 1960 (probably October), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42.5 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Jan. 21	1400	2,880	81.6	21.24	6.474
May 19	1500	*4,740	134	23.39	7.129
Sept. 30	2300	1,930	54.7	19.64	5.986

Minimum daily discharge, 0.11 ft³/s (0.003 m³/s) June 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	23	.86	6.5	2.4	1.7	2.8	.59	.40	1.5	1.3	1.3
2	3.5	4.7	.84	3.7	2.5	1.6	1.9	.54	.15	1.6	1.7	1.2
3	3.3	1.5	.83	3.4	2.6	1.6	1.7	6.5	.11	1.9	.50	1.7
4	3.3	1.5	.77	6.6	2.4	1.7	1.5	3.7	.14	2.0	.15	1.8
5	2.9	1.4	.77	10	2.4	1.9	1.3	1.0	.31	2.0	.37	1.7
6	2.9	1.4	.83	4.9	2.6	1.9	1.3	.46	.49	2.1	.27	29
7	2.6	1.7	1.0	2.7	2.6	1.9	3.1	2.0	.76	2.0	.73	61
8	2.7	1.2	1.1	1.9	5.6	2.1	3.0	14	1.2	2.0	46	360
9	5.5	1.5	1.0	1.5	122	2.1	2.0	49	.58	2.3	23	124
10	3.5	1.5	1.0	1.4	40	2.0	1.2	24	1.5	1.7	36	40
11	2.7	1.5	1.1	1.4	13	2.0	1.1	6.1	1.5	1.1	229	14
12	2.7	1.3	2.6	1.4	6.8	2.1	1.9	2.0	.48	.69	64	4.1
13	2.6	1.2	2.5	1.3	4.7	2.1	3.2	.89	1.2	.73	22	1.1
14	2.6	1.1	3.8	1.3	3.9	1.7	4.3	.57	.65	1.2	8.2	.55
15	2.5	1.0	1.0	1.3	3.7	1.6	6.4	.62	.35	1.7	3.4	.71
16	2.5	.97	1.1	1.3	2.5	1.9	2.9	47	.56	1.9	1.5	.89
17	2.4	.91	.97	1.5	1.9	72	1.3	77	1.4	2.1	58	1.5
18	2.4	1.2	1.0	1.4	2.0	55	.90	33	1.4	1.9	36	1.7
19	2.3	1.1	.97	1.4	2.0	13	.73	2930	1.8	1.6	8.1	2.1
20	2.2	1.2	.96	164	2.0	6.4	.65	846	1.5	2.1	2.0	1.7
21	1.9	1.2	.90	2200	2.1	3.6	.54	178	1.2	2.8	.55	.96
22	1.9	1.5	1.0	749	2.2	2.4	.54	96	1.2	3.1	.31	4.3
23	1.7	1.3	1.0	179	2.2	2.1	4.1	23	.96	3.4	.24	1.9
24	1.5	1.2	.91	54	2.2	1.9	6.1	7.3	1.2	3.0	.16	1.0
25	1.5	1.1	.66	21	2.0	1.7	3.6	2.5	.97	3.1	.14	1.3
26	1.5	1.0	.65	11	1.8	1.6	4.5	1.0	1.3	2.9	.12	14
27	1.5	.97	.65	6.2	1.8	2.2	5.8	3.3	1.8	2.9	.12	61
28	1.5	.90	1.1	4.2	1.8	2.6	2.9	1.6	1.5	3.7	.13	164
29	1.5	.77	43	3.2	1.8	2.1	1.3	.53	1.4	5.8	.30	44
30	1.9	.78	61	2.9	---	2.0	2.0	.83	1.5	4.9	.52	689
31	8.4	---	14	2.6	---	3.3	---	2.7	---	2.4	1.2	---
TOTAL	84.0	61.60	149.87	3452.0	245.5	201.8	74.56	4361.73	29.51	72.12	546.01	1631.51
MEAN	2.71	2.05	4.83	111	8.47	6.51	2.49	141	.98	2.33	17.6	54.4
MAX	8.4	23	61	2200	122	72	6.4	2930	1.8	5.8	229	689
MIN	1.5	.77	.65	1.3	1.8	1.6	.54	.46	.11	.69	.12	.55
AC-FT	167	122	297	6850	487	400	148	8650	59	143	1080	3240

CAL YR 1979 TOTAL 49039.72 MEAN 134 MAX 7260 MIN .41 AC-FT 97270
WTR YR 1980 TOTAL 10910.21 MEAN 29.8 MAX 2930 MIN .11 AC-FT 21640

CHOCOLATE BAYOU BASIN

08164850 CHOCOLATE BAYOU NEAR PORT LAVACA, TX
(Reconnaissance partial-record station)

LOCATION.--Lat 28°35'40", long 96°41'48", Calhoun County, Hydrologic Unit 12100402, at bridge on Sweetwater Road, 2.3 mi (3.7 km) upstream from State Highway 35, and 4.5 mi (7.2 km) southwest of Port Lavaca.

DRAINAGE AREA.--53.7 mi² (139.1 km²).

PERIOD OF RECORD.--Periodic discharge measurements: September 1967 to July 1968, February 1970 to current year. Periodic water-quality data: June 1970 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)
NOV 07...	--	.00	--	--	--	--	--	--	--	--	--
DEC 19...	--	.00	--	--	--	--	--	--	--	--	--
FEB 01...	1055	.68	1060	7.8	8.0	35	10.8	89	1.9	240	120
MAR 12...	1052	.63	5250	8.3	22.5	14	7.2	84	3.9	1200	1100
APR 23...	1032	.41	2800	7.7	23.0	52	6.0	70	8.5	520	200
JUN 04...	1042	.15	3470	7.7	30.0	13	8.2	108	6.0	760	510
JUL 16...	1015	.26	6060	7.6	32.5	4.1	5.9	80	6.7	1200	1000
AUG 27...	--	.00	--	--	--	--	--	--	--	--	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
NOV 07...	--	--	--	--	--	--	--	--	--	--	--
DEC 19...	--	--	--	--	--	--	--	--	--	--	--
FEB 01...	70	16	140	3.9	6.4	150	0	70	240	.2	30
MAR 12...	330	86	570	7.2	6.5	340	0	350	1500	.6	17
APR 23...	150	36	410	7.8	6.8	390	0	130	670	.8	21
JUN 04...	220	50	430	6.8	7.5	300	0	200	920	.5	29
JUL 16...	330	97	760	9.5	6.5	230	0	370	1700	.8	18
AUG 27...	--	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
NOV 07...	--	--	--	--	--	--	--	--	--	--
DEC 19...	--	--	--	--	--	--	--	--	--	--
FEB 01...	647	32	1.9	.03	1.9	.13	.57	.70	.080	16
MAR 12...	2930	22	.10	.01	.11	.08	1.1	1.2	.250	9.8
APR 23...	1620	89	1.1	.27	1.4	.71	1.8	2.5	.400	15
JUN 04...	2010	36	.30	.08	.38	.36	1.4	1.8	.670	64
JUL 16...	3400	21	.00	.02	.00	.13	1.4	1.5	.280	12
AUG 27...	--	--	--	--	--	--	--	--	--	--

08164850 CHOCOLATE BAYOU NEAR PORT LAVACA, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
FEB 01...	1055	4	100	<1	0	2	100
JUL 16...	1015	7	500	1	10	2	40

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
FEB 01...	0	80	.1	0	0	5
JUL 16...	4	540	.3	1	0	20

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	CHLOR-DANE, TOTAL (UG/L)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
FEB 01...	1055	.0	31	.00	.00	.0	.0	0	.00	12
JUL 16...	1015	.0	0	.00	.00	.0	.0	0	.00	7.8

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
FEB 01...	.00	30	.00	9.9	.00	.00	.8	.00	.00	.0
JUL 16...	.00	21	.00	.0	.01	.00	.1	.00	.00	.0

DATE	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)
FEB 01...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0
JUL 16...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
FEB 01...	.00	.00	.00	.00	0	0	.00	.00	.00	.00
JUL 16...	.01	.00	.00	.00	0	0	.00	.00	.00	.00

08165300 NORTH FORK GUADALUPE RIVER NEAR HUNT, TX

LOCATION.--Lat 30°03'36", long 99°23'40", Kerr County, Hydrologic Unit 12100201, on right bank 410 ft (125 m) downstream from Ranch Road 1340, 1.3 mi (2.1 km) downstream from Bear Creek, 3.7 mi (6.0 km) west of Hunt, and 4.1 mi (6.6 km) upstream from Honey Creek.

DRAINAGE AREA.--168 mi² (435 km²).

PERIOD OF RECORD.--August 1967 to current year.

REVISED RECORDS.--WRD TX-74-1: 1971(P).

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1,800.10 ft (548.670 m) National Geodetic Vertical Datum of 1929.

REMARKS--Records good. There is a permit issued by the Texas Department of Water Resources to impound and use 20.33 acre-ft (25,100 m³) of water on a game preserve upstream from station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--13 years, 37.7 ft³/s (1.068 m³/s), 3.05 in/yr (77 mm/yr), 27,310 acre-ft/yr (33.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,300 ft³/s (1,110 m³/s) Aug. 3, 1978, gage height, 26.80 ft (8.169 m), from high-water mark and from rating curve extended above 170 ft³/s (4.81 m³/s) on basis of slope-area measurements of 7,460 and 38,400 ft³/s (211 and 1,090 m³/s); minimum, 0.68 ft³/s (0.019 m³/s) May 30, 1969.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900 occurred July 1, 1932, gage height, 37.3 ft (11.37 m), discharge 140,000 ft³/s (3,960 m³/s), by slope-area measurements, combined flow of North Fork Guadalupe River 5 mi (8 km) upstream and Bear Creek 2 mi (3 km) upstream from mouth, and adjusted for difference in drainage area.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Sept. 7	1500	4,470	127	11.26	3.432
Sept. 29	0930	*27,800	787	23.36	7.120

Minimum discharge, 2.4 ft³/s (0.068 m³/s) May 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	21	21	22	21	18	19	18	16	12	12	11
2	23	21	21	22	21	18	20	18	16	12	11	11
3	22	21	22	22	21	18	20	18	16	12	11	11
4	22	22	21	22	21	18	18	18	16	12	11	12
5	22	21	21	22	21	19	18	18	16	12	12	12
6	23	21	21	22	21	19	18	18	16	12	13	12
7	23	20	21	21	20	19	18	17	13	12	11	1140
8	24	20	22	21	21	20	18	20	14	12	11	198
9	24	21	22	22	21	19	17	21	16	12	12	67
10	23	21	22	22	21	19	16	18	16	12	12	52
11	23	21	22	22	20	19	17	18	16	12	16	46
12	23	21	24	22	20	19	18	18	16	11	15	41
13	23	20	25	22	20	19	19	17	16	11	14	39
14	23	20	24	22	20	18	19	17	14	11	13	34
15	22	20	23	22	20	18	18	27	15	12	13	31
16	22	20	22	22	22	18	18	29	15	12	13	29
17	22	21	22	22	22	19	18	22	14	12	18	28
18	22	24	21	22	21	18	18	19	14	11	22	27
19	21	23	22	23	20	18	18	19	14	11	16	26
20	21	22	22	25	20	19	18	18	14	11	15	27
21	21	23	22	24	19	18	18	19	13	12	14	24
22	22	22	22	24	19	18	17	18	13	12	14	23
23	21	21	23	23	19	18	17	17	13	12	13	22
24	21	22	23	23	19	18	17	21	12	12	13	22
25	21	25	22	22	19	19	21	18	12	12	13	23
26	21	24	22	22	18	20	20	16	12	13	12	32
27	21	25	22	22	18	23	18	11	13	12	12	30
28	22	25	23	22	18	23	18	16	13	12	12	29
29	21	24	26	22	19	21	18	16	11	14	12	2930
30	21	22	24	22	---	19	18	16	11	13	12	159
31	22	---	23	21	---	19	---	17	---	12	14	---
TOTAL	685	654	693	689	582	588	545	573	426	370	412	5148
MEAN	22.1	21.8	22.4	22.2	20.1	19.0	18.2	18.5	14.2	11.9	13.3	172
MAX	24	25	26	25	22	23	21	29	16	14	22	2930
MIN	21	20	21	21	18	18	16	11	11	11	11	11
CFSM	.13	.13	.13	.13	.12	.11	.11	.11	.09	.07	.08	1.02
IN.	.15	.14	.15	.15	.13	.13	.12	.13	.09	.08	.09	1.14
AC-FT	1360	1300	1370	1370	1150	1170	1080	1140	845	734	817	10210

CAL YR 1979 TOTAL 10475 MEAN 28.7 MAX 436 MIN 20 CFSM .17 IN 2.32 AC-FT 20780
WTR YR 1980 TOTAL 11365 MEAN 31.1 MAX 2930 MIN 11 CFSM .19 IN 2.52 AC-FT 22540

08165500 GUADALUPE RIVER AT HUNT, TX

LOCATION.--Lat 30°04'08", long 99°19'23", Kerr County, Hydrologic Unit 12100201, on right bank 56 ft (17 m) upstream and 137 ft (42 m) right of right end of bridge on State highway 39, 0.6 mi (1.0 km) downstream from confluence of North and South Forks, 0.8 mi (1.3 km) east of Hunt, and at mile 430.9 (693.3 km).

DRAINAGE AREA.--288 mi² (746 km²).

PERIOD OF RECORD.--October 1941 to September 1949, discharge not computed above 600 ft³/s (17.0 m³/s), and April 1965 to current year. Occasional discharge measurements made 1950-64.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1,722.7 ft (525.08 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Numerous diversions for irrigation above station, amounts unknown. National Weather Service gage-height telemeter at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--15 years, 72.0 ft³/s (2.039 m³/s), 3.39 in/yr (86 mm/yr), 52,160 acre-ft/yr (64.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62,900 ft³/s (1,780 m³/s) Aug. 2, 1978, gage height, 23.5 ft (7.16 m), from floodmark, from rating curve extended above 3,700 ft³/s (105 m³/s) on basis of channel geometry and flow-over-dam measurement of peak flow; minimum, 6.9 ft³/s (0.20 m³/s) June 17, 1948.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, 36.6 ft (11.16 m) July 2, 1932, from information by local resident, discharge 206,000 ft³/s (5,830 m³/s) determined by slope-area measurement 4.5 mi (7.2 km) downstream from gage.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Sept. 7	1230	12,000	340	14.43	4.398
Sept. 29	1045	*18,000	510	16.14	4.919

Minimum discharge, 14 ft³/s (0.40 m³/s) July 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	48	51	51	50	44	45	33	40	25	22	22
2	56	48	51	51	51	42	47	29	39	25	21	20
3	56	49	51	50	51	43	46	32	38	25	20	20
4	53	49	52	50	51	44	43	33	34	24	20	20
5	52	49	52	50	50	44	41	44	33	24	20	20
6	53	49	52	50	50	45	41	44	35	25	20	20
7	54	52	51	50	50	45	44	38	35	24	21	2310
8	55	55	53	50	51	45	44	44	33	23	23	681
9	55	48	52	50	51	46	42	49	36	24	22	302
10	53	47	53	50	49	45	40	42	39	25	23	216
11	53	48	54	51	48	44	40	32	38	24	37	177
12	54	49	64	50	48	47	40	37	36	24	31	163
13	55	47	63	50	49	44	43	39	34	24	27	143
14	55	47	58	51	49	43	43	39	33	23	26	127
15	54	40	57	51	49	44	42	214	31	23	23	116
16	54	42	56	51	52	45	40	129	31	23	23	109
17	54	49	53	52	50	44	38	78	30	23	59	103
18	54	55	51	55	51	41	36	64	28	23	75	85
19	53	55	50	54	49	40	36	66	30	24	41	90
20	51	56	51	77	46	44	35	56	28	23	33	92
21	51	58	51	68	46	42	39	43	28	26	30	88
22	51	52	51	64	45	42	36	50	28	20	27	85
23	49	49	52	61	45	43	36	48	26	22	25	81
24	50	50	53	57	45	41	35	52	28	22	25	77
25	49	58	50	57	44	44	59	54	26	21	24	80
26	49	54	49	57	44	46	45	46	25	21	22	129
27	50	54	50	54	44	65	40	44	25	20	22	120
28	52	53	56	54	46	61	51	39	26	30	22	113
29	53	52	61	53	46	56	57	39	25	40	23	3280
30	51	51	55	52	---	51	37	38	26	27	23	465
31	48	---	52	51	---	45	---	41	---	22	22	---
TOTAL	1635	1513	1655	1672	1400	1415	1261	1636	944	749	852	9354
MEAN	52.7	50.4	53.4	53.9	48.3	45.6	42.0	52.8	31.5	24.2	27.5	312
MAX	58	58	64	77	52	65	59	214	40	40	75	3280
MIN	48	40	49	50	44	40	35	29	25	20	20	20
CFSM	.18	.18	.19	.19	.17	.16	.15	.18	.11	.08	.10	1.08
IN.	.21	.20	.21	.22	.18	.18	.16	.21	.12	.10	.11	1.21
AC-FT	3240	3000	3280	3320	2780	2810	2500	3250	1870	1490	1690	18550

CAL YR 1979 TOTAL 27307 MEAN 74.8 MAX 843 MIN 40 CFSM .26 IN 3.53 AC-FT 54160
WTR YR 1980 TOTAL 24086 MEAN 65.8 MAX 3280 MIN 20 CFSM .23 IN 3.11 AC-FT 47770

08166000 JOHNSON CREEK NEAR INGRAM, TX

LOCATION.--Lat 30°06'00", long 99°16'38", Kerr County, Hydrologic Unit 12100201, on right bank 1.6 mi (2.6 km) upstream from Henderson Branch, 3.4 mi (5.5 km) northwest of Ingram, 3.8 mi (6.1 km) upstream from mouth, and 9.2 mi (14.8 km) northwest of Kerrville.

DRAINAGE AREA.--114 mi² (295 km²).

PERIOD OF RECORD.--September 1941 to November 1959, October 1961 to current year.

REVISED RECORDS.--WSP 1058: 1942-43. WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,721.30 ft (524.652 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Numerous small diversions above station for irrigation. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--37 years (water years 1942-59, 1962-80), 19.4 ft³/s (0.549 m³/s), 2.31 in/yr (59 mm/yr), 14,060 acre-ft/yr (17.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 95,900 ft³/s (2,720 m³/s) Oct. 4, 1959, gage height, 24.25 ft (7.391 m), from rating curve extended above 4,400 ft³/s (125 m³/s) on basis of slope-area measurements of 9,100 and 16,000 ft³/s (258 and 453 m³/s) and conveyance study; minimum daily, 0.4 ft³/s (0.011 m³/s) July 26, 27, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1852, 35 ft (10.7 m) July 2, 1932, from information by local resident; discharge, 138,000 ft³/s (3,910 m³/s), by slope-area measurement at point 0.5 mi (0.8 km) downstream from State fish hatchery and 6 or 7 mi (10 or 11 km) upstream from gage. Flood of June 14, 1935, reached a stage of 31 or 32 ft (9.4 or 9.8 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,780 ft³/s (50.4 m³/s) Sept. 7 at 1745 hours, gage height, 5.21 ft (1.588 m), no other peak above base of 500 ft³/s (14.2 m³/s); minimum, 2.2 ft³/s (0.062 m³/s) July 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	15	16	17	12	11	17	11	16	3.9	8.1	4.6
2	17	15	16	17	12	11	17	12	12	4.2	5.4	4.6
3	17	15	15	15	14	13	15	11	11	5.7	4.6	4.8
4	15	15	15	15	14	14	15	11	11	5.5	7.5	5.2
5	15	17	15	15	16	15	15	20	11	4.6	9.7	4.3
6	12	17	17	17	17	15	14	18	12	4.5	11	3.7
7	15	17	16	15	17	16	14	17	11	5.7	6.8	399
8	19	18	15	15	17	15	14	18	11	6.9	6.5	442
9	17	15	16	17	14	15	13	17	13	6.7	8.1	131
10	17	16	15	19	12	16	15	19	13	5.4	11	65
11	17	17	17	17	16	16	13	16	13	6.2	19	48
12	19	15	29	15	17	15	11	12	12	7.1	15	33
13	15	22	20	15	22	14	13	12	11	5.7	7.7	28
14	17	19	15	17	21	15	12	13	9.8	5.6	5.6	24
15	19	17	15	19	16	16	17	99	7.9	5.4	7.2	22
16	21	16	15	17	17	16	21	48	9.0	5.3	7.0	18
17	19	16	15	17	16	15	16	27	6.4	6.2	13	17
18	19	19	15	19	19	17	12	22	6.9	5.9	15	15
19	17	17	19	19	18	15	15	21	10	3.1	10	14
20	15	22	13	21	18	13	12	20	9.4	3.2	7.5	14
21	17	20	11	21	17	14	11	22	5.7	4.8	6.6	13
22	15	16	13	19	15	16	12	18	5.2	5.6	6.1	13
23	15	15	18	17	15	15	12	16	5.2	4.9	4.3	14
24	15	15	18	15	14	15	11	15	5.8	4.9	3.5	12
25	15	18	15	15	14	19	19	15	5.1	4.5	3.5	11
26	15	17	14	17	14	17	11	15	4.3	5.1	3.5	13
27	15	19	15	17	14	27	9.2	16	4.2	5.4	3.5	23
28	16	17	21	19	14	22	10	15	3.8	11	3.5	25
29	17	14	26	19	15	18	13	15	3.2	13	3.9	31
30	17	14	22	16	---	17	11	14	4.1	9.2	4.9	23
31	15	---	17	16	---	18	---	19	---	7.8	5.3	---
TOTAL	509	505	515	527	455	491	410.2	624	263.0	183.0	234.3	1475.2
MEAN	16.4	16.8	16.6	17.0	15.7	15.8	13.7	20.1	8.77	5.90	7.56	49.2
MAX	21	22	29	21	22	27	21	99	16	13	19	442
MIN	12	14	11	14	12	11	9.2	11	3.2	3.1	3.5	3.7
AC-FT	1010	1000	1020	1050	902	974	814	1240	522	363	465	2930

CAL YR 1979 TOTAL 9721.2 MEAN 26.6 MAX 410 MIN 7.9 AC-FT 19280
WTR YR 1980 TOTAL 6191.7 MEAN 16.9 MAX 442 MIN 3.1 AC-FT 12280

08166140 GUADALUPE RIVER ABOVE BEAR CREEK AT KERRVILLE, TX

LOCATION.--Lat 30°04'10", long 99°11'42", Kerr County, Hydrologic Unit 12100201, on left bank 600 ft (180 m) downstream from Goat Creek, 900 ft (274 m) upstream from Bear Creek and Bear Creek Crossing, and 2.4 mi (3.9 km) east of intersection of State Highways 27 and 39 in Ingram.

DRAINAGE AREA.--494 mi² (1,280 km²).

PERIOD OF RECORD.--April 1978 to current year.

GAGE.--Water stage recorder. Datum of gage is 1,623.20 ft (494.751 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Discharge not computed above 400 ft³/s (11.3 m³/s). Numerous diversions for irrigation above station, amounts unknown. Several observations of water temperature were made during the period.

EXTREMES FOR PERIOD OF RECORD.--Maximum stage, 32.79 ft (9.994 m) Aug. 3, 1978 (discharge not known); minimum daily discharge, 23 ft³/s (0.65 m³/s) July 22, 1978.

EXTREMES OUTSIDE PERIOD OR RECORD.--Maximum stage since 1900, 34.1 ft (10.39 m) July 2, 1932, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maxumum stage, 12.13 ft (3.697 m) Sept. 29 (discharge not determined); minimum daily discharge, 24 ft³/s (0.68 m³/s) Aug. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	81	80	83	91	78	71	77	67	61	30	35	40
2	81	77	83	89	77	66	77	58	57	28	36	40
3	79	77	84	88	77	66	77	59	55	28	35	38
4	74	77	84	86	77	67	72	60	54	30	33	38
5	73	80	84	85	77	68	69	64	51	29	33	38
6	75	82	84	86	78	69	68	78	50	28	33	39
7	91	80	85	86	78	71	68	74	52	29	33	---
8	82	83	84	85	78	72	67	74	50	29	31	---
9	80	83	85	85	78	72	66	80	50	29	35	---
10	80	77	85	85	76	72	65	77	56	29	36	320
11	79	78	87	85	75	72	67	70	56	28	48	291
12	80	79	99	84	75	76	69	58	53	30	57	276
13	82	80	112	83	77	69	73	62	51	29	50	264
14	92	81	99	83	78	68	72	63	48	27	45	255
15	86	78	95	85	78	68	70	---	45	27	40	247
16	88	70	92	89	82	69	73	245	44	28	39	242
17	88	75	90	92	82	70	71	170	44	27	83	238
18	85	85	88	90	80	69	66	111	39	27	105	233
19	82	86	85	89	79	67	63	105	39	26	74	226
20	80	89	84	89	79	67	63	93	40	26	64	226
21	74	99	82	111	76	62	62	82	38	27	54	226
22	79	91	82	102	74	60	64	77	39	30	52	166
23	74	83	88	96	73	68	62	72	36	28	46	125
24	72	82	91	91	73	65	63	74	33	29	45	121
25	73	87	89	88	73	73	107	73	34	29	45	114
26	76	89	85	87	72	75	93	71	34	28	43	171
27	77	88	84	88	71	111	75	62	32	31	42	210
28	78	88	92	86	71	109	75	62	31	34	41	211
29	82	86	108	85	73	91	86	54	31	59	38	---
30	87	84	102	84	---	87	74	53	30	53	24	---
31	82	---	95	81	---	79	---	58	---	40	41	---
TOTAL	2492	2474	2770	2734	2215	2269	2154	---	1333	952	1416	---
MEAN	80.4	82.5	89.4	88.2	76.4	73.2	71.8	---	44.4	30.7	45.7	---
MAX	92	99	112	111	82	111	107	---	61	59	105	---
MIN	72	70	82	81	71	60	62	---	30	26	24	---
AC-FT	4940	4910	5490	5420	4390	4500	4270	---	2640	1890	2810	---

08167000 GUADALUPE RIVER AT COMFORT, TX

LOCATION (revised).--Lat 29°58'10", long 98°53'33", Kendall County, hydrologic Unit 12100201, on right bank at downstream side of southbound bridge on Interstate Highway 10, at Comfort, 0.5 mi (0.8 km) downstream from Cypress Creek, and at mile 396.2 (637.5 km). Station relocated 0.4 mi (0.6 km) downstream on June 3, 1980.

DRAINAGE AREA (revised).--839 mi^2 (2,173 km^2).

PERIOD OF RECORD.--May 1939 to current year.

REVISED RECORDS.--WSP 1632: 1958. WSP 1732: 1939(M). WSP 2123: Drainage area, 1944(M), 1952(M), 1957(M), 1960(M).

GAGE (revised).--Water-stage recorder. Datum of gage is 1,371.83 ft (418.134 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 27, 1939, nonrecording gage. Nov. 27, 1939, to June 2, 1980 recording at gage site 0.4 mi (0.6 km) upstream at datum 0.22 ft (0.067 m) lower.

REMARKS.--Records good. Many small diversions above station for irrigation. Several observations of water temperature were made during the year. Corps of Engineers gage-height telemeter at station.

AVERAGE DISCHARGE.--41 years (water years 1940-80), 180 ft^3/s (5.098 m^3/s), 130,400 acre-ft/yr (161 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 240,000 ft^3/s (6,800 m^3/s) Aug. 2, 1978, gage height, 40.90 ft (12.466 m), from high-water mark in well, from rating curve extended above 74,000 ft^3/s (2,100 m^3/s) on basis of current-meter measurement of 124,000 ft^3/s (3,510 m^3/s) at gage height 32.47 ft (9.897 m) and slope-area measurement of 182,000 ft^3/s (5,150 m^3/s) at gage height 38.4 ft (11.70 m), made at former gaging station "near Comfort" 5 mi (8 km) upstream; no flow at times in 1952-57, 1963-64. All stages are at site and datum then in use.

Maximum stage since at least 1848, that of Aug. 2, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1869 reached a stage of 40.3 ft (12.28 m), from report by Corps of Engineers. Flood of July 1, 1932, reached a stage of 38.4 ft (11.70 m), from floodmark, and from information by State Department of Highways and Public Transportation. Flood of July 16, 1900, reached about the same stage as that of July 1, 1932, from information by local residents. All stages are at site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,600 ft^3/s (73.6 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Sept. 7	2230	*12,000	340	12.72	3.877
Sept. 29	2030	11,700	331	12.52	3.816

Minimum discharge, 12 ft^3/s (0.34 m^3/s) Aug. 16-18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	122	114	117	146	132	111	121	107	88	59	14	24
2	124	109	115	143	131	105	117	101	89	38	15	28
3	129	109	115	140	128	103	117	97	86	34	17	28
4	122	112	114	137	127	103	112	96	83	33	16	28
5	117	112	112	136	126	102	108	98	82	33	17	29
6	114	114	112	136	126	101	105	98	77	33	17	30
7	112	114	112	136	126	102	105	109	76	32	18	2500
8	109	113	112	136	130	103	104	133	80	31	19	4030
9	108	117	112	132	130	103	100	127	76	29	19	1140
10	106	114	114	134	127	104	101	118	70	30	21	524
11	105	114	115	135	126	103	100	115	73	30	28	357
12	107	114	135	132	126	109	103	111	73	30	27	288
13	107	116	162	131	123	108	107	105	68	29	17	246
14	109	118	145	131	124	102	109	110	63	28	13	207
15	109	119	134	130	126	101	106	112	59	27	15	182
16	109	116	129	128	135	104	103	436	57	26	13	170
17	109	113	126	128	134	107	101	232	55	24	12	158
18	112	154	123	131	131	102	99	170	52	21	12	147
19	109	127	123	130	129	99	96	211	52	20	91	134
20	109	119	127	131	128	101	94	152	49	27	78	124
21	109	153	133	133	127	100	93	161	50	25	63	124
22	109	174	135	146	124	99	92	136	48	28	51	124
23	109	156	141	139	123	91	92	123	47	32	43	120
24	109	150	151	134	119	99	90	114	44	29	42	114
25	109	162	144	129	112	102	139	113	42	26	42	110
26	112	156	141	127	109	107	143	108	45	30	39	134
27	112	151	138	126	108	162	120	104	44	28	37	199
28	112	144	141	127	107	173	109	97	40	27	36	202
29	114	126	187	135	107	155	106	95	38	28	36	2590
30	116	120	164	136	---	134	110	90	37	19	35	1540
31	116	---	154	136	---	126	---	84	---	14	29	---
TOTAL	3475	3830	4083	4151	3601	3421	3202	4063	1843	900	932	15631
MEAN	112	128	132	134	124	110	107	131	61.4	29.0	30.1	521
MAX	129	174	187	146	135	173	143	436	89	59	91	4030
MIN	105	109	112	126	107	91	90	84	37	14	12	24
AC-FT	6890	7600	8100	8230	7140	6790	6350	8060	3660	1790	1850	31000

CAL YR 1979 TOTAL 125864 MEAN 345 MAX 3990 MIN 105 AC-FT 249700
WTR YR 1980 TOTAL 49132 MEAN 134 MAX 4030 MIN 12 AC-FT 97450

08167500 GUADALUPE RIVER NEAR SPRING BRANCH, TX

LOCATION.--Lat 29°51'38", long 98°22'58", Comal County, hydrologic Unit 12100201, on right bank at downstream side of bridge on county road, 226 ft (69 m), downstream from bridge on Ranch Road 311, 1.9 mi (3.1 km) southeast of Spring Branch Post Office, 7.5 mi (12.1 km) downstream from Curry Creek, and at mile 334.4 (538.0 km).

DRAINAGE AREA.--1,315 mi² (3,406 km²).

PERIOD OF RECORD.--June 1922 to current year.

REVISED RECORDS.--WSP 1562: 1923-24, 1926, 1927-28(M), 1929, 1930(M). WSP 2123: Drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 948.10 ft (288.981 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several small diversions above station for irrigation. Several observations of water temperature were made during the year. Guadalupe-Blanco River Authority gage-height telemeter located at station.

AVERAGE DISCHARGE.--58 years, 305 ft³/s (8.638 m³/s), 221,000 acre-ft (272 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 160,000 ft³/s (4,530 m³/s) Aug. 3, 1978, gage height 45.25 ft (13.792 m), from floodmark, from rating curve extended above 55,600 ft³/s (1,570 m³/s) on basis of slope-area measurement of peak flow; no flow at times in 1951-52, 1954-56, and 1963-64.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1859, about 53 ft (16.2 m) in 1869; flood in July 1900 reached a stage of about 49 ft (14.9 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,000 ft³/s (113 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Sept. 8	2000	*8,370	237	12.32	3.755
Sept. 30	1600	6,990	198	11.06	3.371

Minimum discharge, 23 ft³/s (0.65 m³/s) Aug. 17, 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	180	160	173	194	168	137	187	140	200	63	38	42
2	178	153	173	188	165	132	183	144	179	59	33	39
3	179	150	173	179	162	136	183	135	176	72	27	37
4	170	145	176	173	159	135	170	132	170	64	27	36
5	164	148	176	173	159	133	161	126	161	58	26	36
6	164	148	176	173	156	131	156	128	154	55	28	38
7	163	147	173	168	153	134	150	129	151	51	35	107
8	165	150	173	165	156	135	143	141	140	50	33	3220
9	166	154	173	162	162	135	135	201	135	49	30	3570
10	160	152	173	162	162	133	134	195	139	48	31	1430
11	159	154	173	162	156	134	136	167	131	46	45	825
12	159	152	174	162	153	139	134	163	127	46	45	541
13	161	152	182	159	153	141	142	173	127	46	40	400
14	161	152	203	156	153	139	142	206	125	45	42	326
15	160	152	200	156	156	138	148	199	119	44	40	274
16	166	152	187	162	159	137	142	199	113	42	36	232
17	166	154	176	162	159	134	138	542	108	42	30	208
18	163	181	173	162	168	130	131	386	104	41	27	188
19	162	188	173	168	165	133	130	597	100	39	30	179
20	160	198	169	173	162	128	128	529	97	39	31	159
21	157	184	165	179	156	125	128	513	146	37	47	148
22	155	182	173	185	155	126	128	515	125	35	75	140
23	150	212	176	188	150	126	128	386	104	39	64	138
24	150	189	174	188	145	125	128	355	92	39	58	133
25	149	182	181	182	140	125	140	333	84	42	48	128
26	152	182	176	179	139	127	161	271	78	43	47	128
27	153	188	176	170	139	186	200	256	75	41	45	130
28	152	181	176	168	139	460	173	242	73	40	45	211
29	155	173	176	168	140	295	154	228	73	41	41	259
30	159	173	213	168	---	227	143	217	67	40	40	2730
31	157	---	207	168	---	205	---	211	---	38	59	---
TOTAL	4995	4988	5542	5302	4489	4821	4454	8159	3673	1434	1243	16032
MEAN	161	166	179	171	155	156	148	263	122	46.3	40.1	534
MAX	180	212	213	194	168	460	200	597	200	72	75	3570
MIN	149	145	165	156	139	125	128	126	67	35	26	36
AC-FT	9910	9890	10990	10520	8900	9560	8830	16180	7290	2840	2470	31800

CAL YR 1979 TOTAL 279322 MEAN 765 MAX 6380 MIN 145 AC-FT 554000
WTR YR 1980 TOTAL 65132 MEAN 178 MAX 3570 MIN 26 AC-FT 129200

GUADALUPE RIVER BASIN

08167700 CANYON LAKE NEAR NEW BRAUNFELS, TX

LOCATION.--Lat 29°52'07", long 98°11'55", Comal County, Hydrologic Unit 12100201, in intake structure of Canyon Dam on Guadalupe River, 12 mi (19 km) northwest of New Braunfels, and at mile 303.0 (487.5 km).

DRAINAGE AREA.--1,432 mi² (3,709 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1962 to current year. Prior to October 1970, published as Canyon Reservoir.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Sept. 24, 1964, nonrecording gage at present site and datum. Corps of Engineers gage-height telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 6,830 ft (2,082 m) long, consisting of the main dam 4,410 ft (1,344 m) long, an earthen dike 210 ft (64 m) long, a 1,260-foot-long (384 m) uncontrolled broad-crested type spillway, and a 950-foot (290 m) concrete and earthen nonoverflow section. Deliberate impoundment began June 16, 1964, and main part of dam was completed in August 1964. The flood-control outlet works consist of a 10.0-foot-diameter (3.0 m) conduit controlled by two 5.7 by 10.0-foot (1.7 by 3.0 m) hydraulically operated slide gates. The lake was built for water conservation and flood control. Capacity table beginning Oct. 1, 1974, is based on a sedimentation survey of August 1972. Small diversions above the lake for irrigation. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	974.0	-
Crest of spillway	943.0	736,700
Top of conservation pool	909.0	382,000
Lowest gated outlet (invert)	775.0	240

COOPERATION.--Records furnished by the Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 588,400 acre-ft (725 hm³) Aug. 4, 1978, elevation, 930.61 ft (283.650 m); minimum observed since conservation pool first reached in April 1968, 338,600 acre-ft (417 hm³) Sept. 5, 1980, elevation, 903.54 ft (275.399 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 369,100 acre-ft (455 hm³) May 26 at 0300 hours, elevation, 907.41 ft (276.579 m); minimum, 338,600 acre-ft (417 hm³) Sept. 5, elevation, 903.54 ft (275.399 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

903.0	334,500	906.0	357,800
904.0	342,200	907.0	365,800
905.0	349,900	908.0	373,800

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	347800	348100	349900	355800	360700	361900	362300	360800	367000	353100	343200	339200
2	347700	348000	350000	356100	360700	361600	362600	360800	366800	352400	342900	339000
3	347800	348000	350000	356200	360800	361500	362600	360700	366500	352000	342600	338900
4	347700	347900	350000	356200	361000	361500	362400	360700	366100	351100	342300	338800
5	347600	348000	350000	356300	361200	361300	362300	360600	365700	350400	342000	338600
6	347600	348000	350300	356600	361300	361300	362400	360300	365400	349800	341900	339600
7	347600	348000	350400	356600	361500	361200	362400	360500	365000	349200	341800	341900
8	347700	348000	350500	356700	362100	361200	362200	360800	364600	348800	341600	346200
9	347600	348000	350600	356800	362000	361100	362100	360800	364100	348400	341600	352400
10	347400	348000	350800	357000	362000	361100	361900	360800	363600	348100	341900	354600
11	347400	347900	351000	357000	362200	361100	362000	361000	363100	347800	341900	355400
12	347400	348000	351700	357200	362200	361100	361900	361000	362700	347600	341800	355300
13	347500	347900	352000	357200	362300	360800	361500	362400	362100	347300	341700	355000
14	347500	347900	352100	357400	362500	360700	361400	363000	361500	346900	341600	354600
15	347600	347900	352300	357600	362700	360700	361300	363800	361100	346600	341400	354200
16	347700	348000	352400	358100	362800	361000	361300	364300	360500	346400	341200	353600
17	347800	348200	352400	358500	362700	360600	361100	365000	360000	346200	341100	353000
18	347900	348400	352400	358700	362600	360300	361200	365800	359500	345900	340900	352400
19	348000	348600	352600	358900	362700	360300	361000	366600	359100	345600	340800	352600
20	348100	349000	352800	359200	362700	360300	361000	367100	358400	345400	340600	352000
21	348100	349500	353100	359400	362700	360000	360700	368200	359000	345300	340600	351100
22	347900	349500	353400	359700	362700	359900	360700	368800	358600	345100	340500	350500
23	347800	349300	353900	359800	362700	360000	360600	368900	358000	345000	340400	350300
24	347700	349600	353900	359900	362700	359800	360500	369000	357400	344900	340600	350100
25	347700	349700	353900	360000	362500	359600	361400	369000	356900	344600	340400	350300
26	347700	349800	354100	360100	362400	359900	361100	368800	356300	344400	340200	350200
27	347700	349900	354200	360300	362400	360800	361100	368700	355700	344300	340000	350200
28	347800	349900	355100	360300	362200	361600	361100	368600	355000	344100	339900	350200
29	347900	349900	355400	360500	362200	362000	360900	368300	354300	343900	339700	350300
30	348200	349900	355400	360700	---	362100	360900	368000	353600	343700	339600	354100
31	348100	---	355700	360600	---	362200	---	367600	---	343500	339300	---
MAX	348200	349900	355700	360700	362800	362200	362600	369000	367000	353100	343200	355400
MIN	347400	347900	349900	355800	360700	359600	360500	360300	353600	343500	339300	338600
(†)	904.77	904.99	905.73	906.35	906.56	906.55	906.39	907.23	905.47	904.17	903.63	905.53
(‡)	+100	+1800	+5800	+4900	+1600	0	-1300	+6700	-14000	-10100	-4200	+14800

CAL YR 1979 MAX 412600 MIN 347400 ‡ -42300
WTR YR 1980 MAX 369000 MIN 338600 ‡ +6100

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

08167700 CANYON LAKE NEAR NEW BRAUNFELS, TX

LOCATION.--Lat 29°52'07", long 98°11'55", Comal County, Hydrologic Unit 12100201, in intake structure of Canyon Dam on Guadalupe River, 12 mi (19 km) northwest of New Braunfels, and at mile 303.0 (487.5 km).

DRAINAGE AREA.--1,432 mi² (3,709 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1962 to current year. Prior to October 1970, published as Canyon Reservoir.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Sept. 24, 1964, nonrecording gage at present site and datum. Corps of Engineers gage-height telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 6,830 ft (2,082 m) long, consisting of the main dam 4,410 ft (1,344 m) long, an earthen dike 210 ft (64 m) long, a 1,260-foot-long (384 m) uncontrolled broad-crested type spillway, and a 950-foot (290 m) concrete and earthen nonoverflow section. Deliberate impoundment began June 16, 1964, and main part of dam was completed in August 1964. The flood-control outlet works consist of a 10.0-foot-diameter (3.0 m) conduit controlled by two 5.7 by 10.0-foot (1.7 by 3.0 m) hydraulically operated slide gates. The lake was built for water conservation and flood control. Capacity table beginning Oct. 1, 1974, is based on a sedimentation survey of August 1972. Small diversions above the lake for irrigation. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam..	974.0	-
Crest of spillway..	943.0	736,700
Top of conservation pool..	909.0	382,000
Lowest gated outlet (invert)......................................	775.0	240

COOPERATION.--Records furnished by the Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 588,400 acre-ft (725 hm³) Aug. 4, 1978, elevation, 930.61 ft (283.650 m); minimum observed since conservation pool first reached in April 1968, 338,600 acre-ft (417 hm³) Sept. 5, 1980, elevation, 903.54 ft (275.399 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 369,100 acre-ft (455 hm³) May 26 at 0300 hours, elevation, 907.41 ft (276.579 m); minimum, 338,600 acre-ft (417 hm³) Sept. 5, elevation, 903.54 ft (275.399 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

903.0	334,500	906.0	357,800
904.0	342,200	907.0	365,800
905.0	349,900	908.0	373,800

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	347800	348100	349900	355800	360700	361900	362300	360800	367000	353100	343200	339200
2	347700	348000	350000	356100	360700	361600	362600	360800	366800	352400	342900	339000
3	347800	348000	350000	356200	360800	361500	362600	360700	366500	352000	342600	338900
4	347700	347900	350000	356200	361000	361500	362400	360700	366100	351100	342300	338800
5	347600	348000	350000	356300	361200	361300	362300	360600	365700	350400	342000	338600
6	347600	348000	350300	356600	361300	361300	362400	360300	365400	349800	341900	339600
7	347600	348000	350400	356600	361500	361200	362400	360500	365000	349200	341800	341900
8	347700	348000	350500	356700	362100	361200	362200	360800	364600	348800	341600	346200
9	347600	348000	350600	356800	362000	361100	362100	360800	364100	348400	341600	352400
10	347400	348000	350800	357000	362000	361100	361900	360800	363600	348100	341900	354600
11	347400	347900	351000	357000	362200	361100	362000	361000	363100	347800	341900	355400
12	347400	348000	351700	357200	362200	361100	361900	361000	362700	347600	341800	355300
13	347500	347900	352000	357200	362300	360800	361500	362400	362100	347300	341700	355000
14	347500	347900	352100	357400	362500	360700	361400	363000	361500	346900	341600	354600
15	347600	347900	352300	357600	362700	360700	361300	363800	361100	346600	341400	354200
16	347700	348000	352400	358100	362800	361000	361300	364300	360500	346400	341200	353600
17	347800	348200	352400	358500	362700	360600	361100	365000	360000	346200	341100	353000
18	347900	348400	352400	358700	362600	360300	361200	365800	359500	345900	340900	352400
19	348000	348600	352600	358900	362700	360300	361000	366600	359100	345600	340800	352600
20	348100	349000	352800	359200	362700	360300	361000	367100	358400	345400	340600	352000
21	348100	349500	353100	359400	362700	360000	360700	368200	359000	345300	340600	351100
22	347900	349500	353400	359700	362700	359900	360700	368800	358600	345100	340500	350500
23	347800	349300	353900	359800	362700	360000	360600	368900	358000	345000	340400	350300
24	347700	349600	353900	359900	362700	359800	360500	369000	357400	344900	340600	350100
25	347700	349700	353900	360000	362500	359600	361400	369000	356900	344600	340400	350300
26	347700	349800	354100	360100	362400	359900	361100	368800	356300	344400	340200	350200
27	347700	349900	354200	360300	362400	360800	361100	368700	355700	344300	340000	350200
28	347800	349900	355100	360300	362200	361600	361100	368600	355000	344100	339900	350200
29	347900	349900	355400	360500	362200	362000	360900	368300	354300	343900	339700	350300
30	348200	349900	355400	360700	---	362100	360900	368000	353600	343700	339600	354100
31	348100	---	355700	360600	---	362200	---	367600	---	343500	339300	---
MAX	348200	349900	355700	360700	362800	362200	362600	369000	367000	353100	343200	355400
MIN	347400	347900	349900	355800	360700	359600	360500	360300	353600	343500	339300	338600
(†)	904.77	904.99	905.73	906.35	906.56	906.55	906.39	907.23	905.47	904.17	903.63	905.53
(‡)	+100	+1800	+5800	+4900	+1600	0	-1300	+6700	-14000	-10100	-4200	+14800

CAL YR 1979 MAX 412600 MIN 347400 ‡ -42300
WTR YR 1980 MAX 369000 MIN 338600 ‡ +6100

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

08167700 CANYON LAKE NEAR NEW BRAUNFELS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
APR										
29...	1335	415	8.2	12.5	10.1	95	200	20	49	19

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
APR										
29...	10	.3	1.8	220	0	23	18	.2	11	240

08167800 GUADALUPE RIVER AT SATTLER, TX

LOCATION.--Lat 29°51'32", long 98°10'47", Comal County, hydrologic Unit 12100202, on right bank 200 ft (61 m) upstream from Horseshoe Falls, 0.8 mi (1.3 km) north of Sattler, 1.8 mi (2.9 km) downstream from Canyon Dam, 2.3 mi (3.7 km) upstream from Heiser Hollow, 11.2 mi (18.0 km) north of New Braunfels, and at mile 301.2 (484.6 km).

DRAINAGE AREA.--1,436 mi² (3,719 km²), of which 1,432 mi² (3,709 km²) is above Canyon Dam.

PERIOD OF RECORD.--March 1960 to current year.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 742.24 ft (226.235 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--Records good. Flow completely regulated since July 21, 1962, by Canyon Lake (station 08167700) 1.8 mi (2.9 km) upstream. Small diversions above station for irrigation. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--17 years (water years 1962-80) since regulation began at Canyon Lake, 391 ft³/s (11.07 m³/s), 283,300 acre-ft/yr (349 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,800 ft³/s (589 m³/s) Oct. 29, 1960, gage height, 12.20 ft (3.719 m). Maximum discharge since closure of Canyon Dam on July 21, 1962, 5,850 ft³/s (166 m³/s) Aug. 5, 1978, gage height, 8.31 ft (2.533 m); no flow July 31 to Aug. 6, 1962 (result of closure of Canyon Dam), and part of Jan. 29, 30, Feb. 1, 1965 (result of closure while constructing present control).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1869 (stage unknown) has not been exceeded since that date; flood in July 1900 (stage unknown) exceeded 39 ft (11.9 m); maximum stage since at least 1904, 39 ft (11.9 m) in July 1932 and June 1935, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 476 ft³/s (13.5 m³/s) Sept. 19, gage height, 5.51 ft (1.679 m); minimum, 45 ft³/s (1.27 m³/s) Aug. 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	218	93	90	92	92	159	162	157	313	322	52	50
2	140	93	90	92	92	159	159	157	313	322	52	48
3	92	93	90	92	92	159	159	157	313	322	52	48
4	92	93	90	92	91	159	159	157	313	322	52	48
5	92	93	90	92	90	159	159	157	313	322	52	48
6	92	93	90	92	90	159	159	157	313	322	52	51
7	92	95	90	92	90	159	159	157	313	256	52	60
8	92	95	90	92	90	159	159	157	313	206	52	53
9	92	95	90	92	90	159	159	157	313	157	52	52
10	93	95	90	92	90	159	159	157	313	110	52	52
11	93	95	90	92	90	159	159	157	313	104	52	284
12	93	95	90	92	90	161	159	157	313	104	52	470
13	93	95	90	92	90	162	159	166	313	104	52	470
14	93	95	90	92	111	162	154	158	313	93	52	470
15	93	93	90	92	161	162	141	158	313	79	52	470
16	93	90	90	92	162	162	169	157	313	79	52	470
17	93	90	90	92	162	162	162	157	313	79	51	470
18	93	90	90	92	162	148	155	157	313	79	51	470
19	93	90	90	92	162	157	156	157	313	79	51	476
20	93	90	90	92	162	159	155	159	313	79	51	476
21	93	90	90	92	162	159	154	162	329	66	51	476
22	93	90	90	92	162	159	157	242	319	53	51	376
23	93	90	91	92	162	159	157	313	318	53	51	197
24	95	90	92	92	162	159	157	313	318	53	51	197
25	95	90	92	92	162	159	158	313	318	53	51	198
26	95	90	92	92	162	159	157	313	318	53	51	198
27	95	90	92	92	162	162	157	313	318	53	51	197
28	95	90	93	92	162	162	157	313	318	53	51	197
29	95	90	92	92	159	162	157	313	322	52	51	197
30	95	90	92	92	---	162	157	313	322	52	51	197
31	93	---	92	92	---	162	---	313	---	52	51	---
TOTAL	3062	2761	2808	2852	3714	4948	4730	6374	9460	4133	1597	7466
MEAN	98.8	92.0	90.6	92.0	128	160	158	206	315	133	51.5	249
MAX	218	95	93	92	162	162	169	313	329	322	52	476
MIN	92	90	90	92	90	148	141	157	313	52	51	48
AC-FT	6070	5480	5570	5660	7370	9810	9380	12640	18760	8200	3170	14810

CAL YR 1979 TOTAL 295102 MEAN 808 MAX 5490 MIN 88 AC-FT 585300
WTR YR 1980 TOTAL 53905 MEAN 147 MAX 476 MIN 48 AC-FT 106900

08168500 GUADALUPE RIVER ABOVE COMAL RIVER AT NEW BRAUNFELS, TX

LOCATION.--Lat 29°42'53", long 98°06'35", Comal County, Hydrologic Unit 12100202, on right bank at New Braunfels, 1.1 mi (1.8 km) upstream from Comal River, 21.9 mi (35.2 km) downstream from Canyon Lake, and at mile 281.1 (452.3 km).

DRAINAGE AREA.--1,518 mi² (3,932 km²).

PERIOD OF RECORD.--December 1927 to current year.

REVISED RECORDS.--WSP 898: 1935. WSP 1562: 1932. WSP 2123: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 586.65 ft (178.811 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Small diversions for irrigation below station 08167800 and above this station. Since July 21, 1962, flow is largely regulated by Canyon Lake (station 08167700) 21.9 mi (35.2 km) upstream. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--34 years (water years 1929-62) prior to regulation by Canyon Lake, 372 ft³/s (10.54 m³/s), 269,500 acre-ft/yr (332 hm³/yr); 18 years (water year 1963-80) regulated, 485 ft³/s (13.74 m³/s), 351,400 acre-ft/yr (433 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 101,000 ft³/s (2,860 m³/s) June 15, 1935, gage height, 32.95 ft (10.043 m); no flow July 8, 9, July 17 to Aug. 20, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1845, 38 ft (11.6 m) July 8, 1869, and in December 1913, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,770 ft³/s (50.1 m³/s) June 21 at 0900 hours, gage height, 3.66 ft (1.116 m); minimum, 70 ft³/s (1.982 m³/s) Aug. 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	305	157	137	137	121	198	208	198	402	345	77	76
2	296	154	138	134	124	193	208	198	395	345	78	76
3	207	153	138	130	122	198	206	198	392	345	78	76
4	183	151	139	130	121	198	203	197	387	345	77	76
5	179	149	140	130	124	198	203	193	387	345	78	75
6	176	151	141	130	124	198	203	193	385	345	79	90
7	176	149	139	130	127	203	203	202	382	327	86	244
8	175	149	138	130	127	203	200	202	379	246	81	210
9	179	149	139	130	124	203	200	201	373	240	79	188
10	174	148	141	130	124	203	202	202	376	168	97	173
11	173	146	141	130	127	203	203	203	376	154	103	209
12	172	145	147	127	127	203	203	205	373	149	88	545
13	170	145	152	127	127	203	207	255	373	145	83	543
14	171	145	139	130	127	198	203	480	373	142	82	528
15	174	145	137	130	179	203	194	345	373	126	81	519
16	172	145	137	130	198	203	207	358	364	120	79	514
17	171	145	134	137	193	198	212	333	358	117	82	510
18	170	145	135	130	198	198	204	316	358	118	81	510
19	170	145	137	130	198	188	193	308	358	117	84	515
20	170	145	137	130	198	203	200	296	358	115	78	519
21	170	148	137	130	193	203	196	306	731	115	78	511
22	168	144	137	134	193	203	201	317	399	98	77	503
23	164	143	141	127	198	206	203	446	382	85	76	260
24	161	142	137	127	198	202	203	442	372	83	78	245
25	158	145	134	127	198	202	225	436	365	82	81	246
26	157	142	134	124	198	203	203	426	365	83	77	251
27	157	141	137	124	198	224	202	421	358	81	76	251
28	157	141	161	124	198	221	199	417	352	79	75	253
29	157	138	166	124	198	212	198	410	351	80	75	247
30	158	137	141	124	---	208	198	413	347	80	75	255
31	158	---	137	121	---	208	---	408	---	78	75	---
TOTAL	5528	4382	4348	3998	4682	6287	6090	9525	11544	5298	2494	9218
MEAN	178	146	140	129	161	203	203	307	385	171	80.5	307
MAX	305	157	166	137	198	224	225	480	731	345	103	545
MIN	157	137	134	121	121	188	193	193	347	78	75	75
AC-FT	10960	8690	8620	7930	9290	12470	12080	18890	22900	10510	4950	18280

CAL YR 1979 TOTAL 356267 MEAN 976 MAX 5810 MIN 134 AC-FT 706700
WTR YR 1980 TOTAL 73394 MEAN 201 MAX 731 MIN 75 AC-FT 145600

08169000 COMAL RIVER AT NEW BRAUNFELS, TX

LOCATION.--Lat 29°42'21", long 98°07'20", Comal County, Hydrologic Unit 12100202, on right bank 200 ft (61 m) upstream from San Antonio Street viaduct in New Braunfels and 1.1 mi (1.8 km) upstream from mouth.

DRAINAGE AREA.--130 mi² (337 km²). Normal flow of river comes from springs; drainage area not applicable.

PERIOD OF RECORD.--1882 to current year (1882 to November 1927, discharge measurements only).

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Oct. 1, 1955. Datum of gage is 582.80 ft (177.637 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. The flow from Comal Springs emerges from the Edwards and associated limestones in the Balcones Fault Zone. Except during periods of rainfall, flow of river is primarily from Comal Springs about 1.0 mi (1.6 km) upstream. Diurnal fluctuations from steam powerplant 0.5 mi (0.8 km) upstream. Flow is affected at times by discharge from flood-detention pools of five floodwater-retarding structures with combined detention capacity of 17,580 acre-ft (21.7 hm³). These structures control runoff from 74.6 mi² (193 km²). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--48 years (water years 1933-80), 299 ft³/s (8.468 m³/s), 216,600 acre-ft/yr (267 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 60,800 ft³/s (1,720 m³/s) May 11, 1972, gage height, 36.55 ft (11.140 m), from floodmark, from rating curve extended above 13,000 ft³/s (368 m³/s) on basis of contracted-opening measurements on Blieders and Dry Comal Creeks and unit rainfall-runoff studies; no flow from Comal Springs from June 13 to Nov. 3, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood information begins with flood of July 8, 1869, which reached a stage of 36.91 ft (11.250 m), from painted and dated marks in old Remmert Brewery 0.5 mi (0.8 km) downstream; the flood of Oct. 17, 1870, reached a stage of 37.65 ft (11.476 m) at same site (probably some backwater from Guadalupe River).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 983 ft³/s (27.8 m³/s) Sept. 7 at 0400 hours gage height, 5.48 ft (1.670 m), no peak above base of 1,100 ft³/s (31.2 m³/s); minimum daily, 184 ft³/s (5.21 m³/s) Aug. 1, 4-7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	396	350	345	365	355	335	322	290	322	222	184	215
2	386	350	345	365	355	330	317	286	317	222	191	229
3	385	350	345	365	355	330	317	282	308	222	187	219
4	385	350	345	365	355	330	322	290	299	219	184	219
5	380	350	345	365	355	330	312	290	304	222	184	204
6	380	350	345	365	355	330	317	286	294	219	184	251
7	380	345	345	365	350	330	322	290	304	215	184	398
8	380	340	345	365	355	330	312	290	299	204	187	266
9	375	345	345	365	355	330	308	286	299	201	194	252
10	380	345	350	365	350	330	308	294	299	208	215	242
11	370	340	345	365	350	330	308	294	299	204	208	242
12	370	345	355	360	350	330	299	299	294	204	204	234
13	375	345	355	360	350	322	317	340	286	208	215	242
14	375	338	350	360	350	322	312	345	290	201	219	246
15	370	345	350	360	355	322	312	345	290	191	215	246
16	370	345	350	365	355	330	299	326	278	194	222	242
17	370	345	350	360	355	322	299	322	274	190	226	246
18	365	345	350	360	355	322	299	322	266	187	226	242
19	360	345	345	360	350	322	299	326	266	191	222	238
20	370	345	350	370	350	317	299	317	262	191	222	242
21	360	345	355	360	345	322	294	322	360	191	222	246
22	365	345	355	396	345	317	294	317	282	187	215	242
23	365	345	365	370	345	317	294	312	270	194	219	242
24	355	350	360	365	340	321	290	317	258	194	219	238
25	355	350	360	365	340	317	308	322	254	194	219	242
26	360	345	360	365	330	322	286	317	254	197	208	242
27	355	345	360	365	340	330	290	322	242	197	211	250
28	360	345	446	365	340	322	295	317	246	191	219	250
29	350	345	385	360	340	317	286	317	246	191	211	250
30	355	345	370	360	---	322	286	312	238	187	219	278
31	355	---	365	355	---	317	---	317	---	187	222	---
TOTAL	11457	10373	11036	11296	10125	10068	9123	9612	8500	6225	6457	7395
MEAN	370	346	356	364	349	325	304	310	283	201	208	247
MAX	396	350	446	396	355	335	322	345	360	222	226	398
MIN	350	338	345	355	330	317	286	282	238	187	184	204
AC-FT	22720	20570	21890	22410	20080	19970	18100	19070	16860	12350	12810	14670

CAL YR 1979 TOTAL 147589 MEAN 404 MAX 766 MIN 338 AC-FT 292700
WTR YR 1980 TOTAL 111667 MEAN 305 MAX 446 MIN 184 AC-FT 221500

08169580 GUADALUPE RIVER BELOW NEW BRAUNFELS, TX

LOCATION.--Lat 29°40'00", long 98°04'14", Comal County, Hydrologic Unit 12100202, in Lake Dunlap, 8 mi (13 km) southeast of New Braunfels, and 15 mi (24 km) downstream from Interstate Highway 35 bridge.

PERIOD OF RECORD.--Periodic chemical and biochemical analyses: January 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)
NOV 15...	1442	525	7.5	19.5	9.0	99	1.1	260	30	76
JAN 03...	1505	520	8.1	17.5	9.6	100	1.2	230	13	69
MAR 25...	1255	518	8.0	20.5	9.3	105	.9	230	15	65
APR 29...	1100	511	7.9	22.5	8.5	99	1.2	240	29	69
JUL 18...	1210	408	8.0	31.5	>20.0	<274	20	170	30	40
SEP 02...	1310	479	8.4	29.0	15.9	209	6.6	190	14	51

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
NOV 15...	17	16	.4	1.7	280	0	25	24	.2
JAN 03...	15	11	.3	1.5	270	0	25	17	.2
MAR 25...	16	13	.4	1.5	260	0	24	19	.2
APR 29...	17	15	.4	1.8	260	0	27	20	.2
JUL 18...	17	17	.6	1.7	170	0	24	36	--
SEP 02...	16	19	.6	1.5	210	4	22	27	.3

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
NOV 15...	12	310	1.2	.02	1.2	.08	.44	.52	.070
JAN 03...	11	283	.64	.06	.70	.06	.85	.91	.060
MAR 25...	10	277	1.1	.03	1.1	.15	.68	.83	.070
APR 29...	11	289	.91	.01	.92	.06	.63	.69	.060
JUL 18...	11	230	.00	.01	.00	.03	1.6	1.6	.180
SEP 02...	8.7	253	.11	.01	.12	.40	.70	1.1	.100

08170000 SAN MARCOS RIVER SPRING FLOW AT SAN MARCOS, TX

LOCATION.--Lat 29°52'06", long 97°55'38", Hays County, Hydrologic Unit 12100203, on left bank 0.7 mi (1.1 km) downstream from bridge on Interstate Highway 35 and U.S. Highway 81, 1.2 mi (1.9 km) southeast of courthouse in San Marcos, and 2.1 mi (3.4 km) upstream from Blanco River.

DRAINAGE AREA.--93.0 mi² (240.9 km²). Normal flow of river comes from springs, drainage area of stream not applicable.

PERIOD OF RECORD.--May 1956 to current year. June 1915 to January 1916, March 1916 to September 1921, and May to September 1956, published as San Marcos River at San Marcos; records include some surface runoff. Periodic measurements of spring flow were made at this location outside periods of records since Nov. 14, 1894, and are published as miscellaneous measurements.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 536.82 ft (163.623 m) National Geodetic Vertical Datum of 1929. June 10, 1915, to Jan. 19, 1916, nonrecording gage at site 1.2 mi (1.9 km) upstream, and Mar. 13, 1916, to Sept. 7, 1921, water-stage recorder near present site, datum relations unknown.

REMARKS.--Records good. Flow slightly regulated by utilities dam about 1.5 mi (2.4 km) upstream. Entire flow of river is from San Marcos Springs, about 1.8 mi (2.9 km) upstream, except during period of local runoff. Springs emerge from the Edwards and associated limestones in the Balcones Fault Zone. Small diversion for operation of State fish hatchery, some of which is returned above gage. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--24 years (water years 1957-80), 168 ft³/s (4.758 m³/s), 121,700 acre-ft/yr (150 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily spring discharge, 316 ft³/s (8.95 m³/s) June 12, 1975; maximum discharge, 76,600 ft³/s (2,170 m³/s) May 15, 1970, gage height, 35.12 ft (10.705 m); minimum daily spring discharge, 46 ft³/s (1.30 m³/s) Aug. 15, 16, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1913, 38.6 ft (11.77 m) Sept. 10, 1921 (from floodmark, backwater from Blanco River), present datum.

EXTREMES FOR CURRENT YEAR.--Maximum daily spring discharge, 169 ft³/s (4.79 m³/s) Oct. 20; maximum gage height, 7.95 ft (2.423 m) May 13 at 2000 hours (flood runoff); minimum daily spring discharge, 111 ft³/s (3.14 m³/s) May 1, 2, 5, 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	165	152	143	140	134	133	119	111	152	143	129	121
2	165	152	147	140	135	133	119	111	152	144	131	122
3	163	151	149	141	134	134	119	113	151	143	131	121
4	163	151	146	139	135	135	117	113	151	139	132	120
5	166	151	144	139	134	134	115	111	151	139	132	117
6	168	147	143	140	133	134	116	111	151	141	131	119
7	166	147	140	138	132	134	116	113	152	142	132	127
8	166	145	136	138	132	132	116	114	151	141	132	133
9	165	146	136	138	133	132	118	114	149	140	133	135
10	166	144	141	138	133	130	118	117	150	137	135	138
11	168	143	146	138	132	130	118	117	149	136	135	140
12	168	141	144	138	131	130	118	118	148	138	135	140
13	168	140	144	140	131	129	118	118	147	136	135	137
14	168	138	140	136	133	128	117	121	147	138	135	135
15	168	140	142	136	132	127	117	138	147	138	136	135
16	166	143	141	136	135	127	117	151	147	138	135	135
17	165	149	135	137	136	127	116	152	146	137	135	133
18	165	154	138	139	136	126	114	150	144	134	135	134
19	166	154	138	139	136	126	114	150	145	135	130	135
20	169	152	136	140	136	124	113	146	143	133	129	137
21	168	149	136	138	136	122	112	147	147	133	131	138
22	166	147	135	138	136	121	112	151	151	132	129	136
23	163	147	136	136	138	122	113	157	154	133	127	135
24	160	143	136	136	138	120	114	160	152	132	127	135
25	159	144	136	137	137	120	114	162	148	132	128	135
26	162	145	136	137	136	120	116	160	146	133	128	135
27	161	146	137	135	138	121	118	157	146	132	125	136
28	160	143	138	135	140	122	116	155	147	131	125	138
29	157	142	138	135	138	119	114	152	149	131	126	138
30	155	143	139	135	---	121	112	152	146	129	127	138
31	152	---	140	132	---	120	---	154	---	130	126	---
TOTAL	5087	4389	4336	4264	3910	3933	3476	4196	4459	4220	4057	3978
MEAN	164	146	140	138	135	127	116	135	149	136	131	133
MAX	169	154	149	141	140	135	119	162	154	144	136	140
MIN	152	138	135	132	131	119	112	111	143	129	125	117
AC-FT	10090	8710	8600	8460	7760	7800	6890	8320	8840	8370	8050	7890

CAL YR 1979 TOTAL 73069 MEAN 200 MAX 277 MIN 135 AC-FT 144900
WTR YR 1980 TOTAL 50305 MEAN 137 MAX 169 MIN 111 AC-FT 99780

08171000 BLANCO RIVER AT WIMBERLEY, TX

LOCATION.--Lat 29°59'39", long 98°05'19", Hays County, Hydrologic Unit 12100203, on left bank at downstream side of highway, near left end of bridge on Ranch Road 12, 0.3 mi (0.5 km) southeast of Wimberley, 2,200 ft (671 m) downstream from Cypress Creek, and at mile 29.0 (46.7 km).

DRAINAGE AREA.--355 mi^2 (919 km^2).

PERIOD OF RECORD.--August 1924 to September 1926, June 1928 to current year.

REVISED RECORDS.--WSP 1562: 1929, 1930-31(M), 1935-36(M), 1938(M), 1941-42(M), 1947(M), 1949(M). WSP 2123: Drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 797.23 ft (242.996 m) National Geodetic Vertical Datum of 1929. Aug. 6, 1924, to Sept. 30, 1926, nonrecording gage at site 1,030 ft (314 m) upstream at datum 5.00 ft (1.524 m) higher. Recording gage June 6, 1928, to June 12, 1975, at site 1,000 ft (305 m) upstream at datum 5.00 ft (1.524 m) higher.

REMARKS.--Records good. Numerous small diversions above station. Flow is affected at times by discharge from flood-detention pool of a floodwater-retarding structure with a detention capacity of 185 acre-ft (228,000 m^3). This structure controls runoff from 0.61 mi^2 (1.58 km^2) in the Town Creek drainage basin.

AVERAGE DISCHARGE.--54 years (water years 1925-26, 1929-80), 123 ft^3/s (3.483 m^3/s), 4.71 in/yr (120 mm/yr), 89,110 acre-ft/yr (110 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 113,000 ft^3/s (3,200 m^3/s) May 28, 1929, gage height, 33.9 ft (10.33 m), present site and datum, from floodmarks, from rating curve extended above 30,000 ft^3/s (850 m^3/s) on basis of slope-area measurements of 95,000 and 113,000 ft^3/s (2,690 and 3,200 m^3/s); minimum, 0.6 ft^3/s (0.017 m^3/s) Aug. 16, 1956.

Maximum stage since at least 1869, that of May 28, 1929.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1869 reached a stage of 26 ft (7.9 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,260 (35.7 m^3/s) May 21 at 1630 hours, gage height, 5,89 ft (1.795 m), no peak above base of 1,800 ft^3/s (51.0 m^3/s); minimum daily, 18 ft^3/s (0.510 m^3/s) Aug. 31, Sept. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74	52	47	44	37	37	74	54	114	45	28	18
2	76	53	48	45	40	32	68	52	108	44	29	19
3	76	54	49	45	39	34	67	49	105	44	27	19
4	70	55	50	43	38	35	62	48	99	46	24	19
5	66	53	50	41	40	34	63	48	94	49	26	21
6	71	52	51	41	43	31	63	47	94	50	24	28
7	67	52	50	41	47	33	65	51	91	49	24	79
8	67	52	49	41	49	32	60	50	89	44	23	67
9	67	54	46	41	44	32	59	45	89	45	25	53
10	65	50	47	41	40	31	60	48	86	46	35	43
11	68	50	48	39	40	32	60	52	81	47	37	44
12	71	48	53	38	40	39	55	58	79	47	26	40
13	66	48	54	38	41	33	62	90	77	45	26	36
14	61	48	46	40	43	31	68	167	73	43	25	33
15	59	48	44	38	42	33	68	164	70	41	24	32
16	59	48	43	41	46	33	64	150	65	41	24	31
17	57	50	38	47	35	34	61	134	62	43	23	31
18	56	52	36	42	37	31	57	124	60	39	23	28
19	56	51	38	39	37	31	54	137	59	37	20	160
20	56	53	39	39	38	33	52	140	58	33	20	58
21	56	52	39	37	39	31	52	610	62	34	20	45
22	54	47	43	42	41	32	51	378	112	36	20	40
23	52	49	43	43	41	32	52	250	72	39	19	38
24	53	50	43	39	50	32	50	208	68	41	20	37
25	54	53	42	40	56	31	77	185	66	45	21	37
26	55	52	41	40	47	31	60	167	63	49	21	36
27	55	51	40	39	43	92	56	152	62	41	20	39
28	56	47	46	39	43	120	57	142	57	32	20	35
29	55	45	53	39	42	97	54	134	51	32	19	36
30	59	46	44	39	---	91	54	128	48	31	19	44
31	54	---	44	37	---	82	---	122	---	31	18	---
TOTAL	1911	1515	1404	1258	1218	1332	1805	4184	2314	1289	730	1246
MEAN	61.6	50.5	45.3	40.6	42.0	43.0	60.2	135	77.1	41.6	23.5	41.5
MAX	76	55	54	47	56	120	77	610	114	50	37	160
MIN	52	45	36	37	35	31	50	45	48	31	18	18
CFSM	.17	.14	.13	.11	.12	.12	.17	.38	.22	.12	.07	.12
IN.	.20	.16	.15	.13	.13	.14	.19	.44	.24	.14	.08	.13
AC-FT	3790	3010	2780	2500	2420	2640	3580	8300	4590	2560	1450	2470

CAL YR 1979 TOTAL 93584 MEAN 256 MAX 3080 MIN 36 CFSM .72 IN 9.81 AC-FT 185600
WTR YR 1980 TOTAL 20206 MEAN 55.2 MAX 610 MIN 18 CFSM .16 IN 2.12 AC-FT 40080

08171300 BLANCO RIVER NEAR KYLE, TX

LOCATION.--Lat 29°58'45", long 97°54'35", Hays County, Hydrologic Unit 12100203, on left bank 800 ft (240 m) downstream from Tarbutton Ranch House (Hatchett Ranch), 2.2 mi (3.5 km) southwest of Kyle, 4.2 mi (6.8 km) downstream from Halifax Creek, and 6.3 mi (10.1 km) upstream from bridge on U.S. Highway 81.

DRAINAGE AREA.--412 mi^2 (1,067 km^2).

PERIOD OF RECORD.--May 1956 to current year.

REVISED RECORDS.--WSP 1923: 1957-58, 1960(M). WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 620.12 ft (189.013 m) Corps of Engineers datum.

REMARKS.--Records good. Small diversions above station for irrigation. Most of the low flow of the Blanco River enters the Edwards and associated limestones in the Balcones Fault Zone which crosses the basin upstream from this station and below the station at Wimberley. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08171000. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--24 years (water years 1957-80), 152 ft^3/s (4.305 m^3/s), 5.01 in/yr (127 mm/yr), 110,100 acre-ft/yr (136 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 98,000 ft^3/s (2,780 m^3/s) May 2, 1958, gage height, 36.3 ft (11.06 m); from floodmark, from rating curve extended above 37,000 ft^3/s (1,050 m^3/s) on basis of slope-area measurement of 139,000 ft^3/s (3,940 m^3/s) and slope-conveyance study; no flow at times in 1956-57, 1963-65, 1967, 1971, and 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1882, about 40 ft (12.2 m) in May 1929, from information by local residents, discharge, 139,000 ft^3/s (3,940 m^3/s). Flood of Sept. 11, 1952, reached a stage of 38.0 ft (11.58 m), discharge, 115,000 ft^3/s (3,260 m^3/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,140 ft^3/s (32.3 m^3/s) May 21 at 2100 hours, gage height, 8.54 ft (2.603 m), no peak above base of 2,500 ft^3/s (70.8 m^3/s); minimum, 2.8 ft^3/s (0.079 m^3/s) Sept. 5, 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	29	30	31	27	27	50	32	99	29	7.7	3.1
2	36	28	30	31	27	22	50	32	92	28	7.1	3.3
3	35	28	31	31	28	21	44	30	89	27	6.7	3.2
4	34	28	31	30	27	22	39	29	84	25	6.7	3.1
5	33	28	30	30	27	22	35	29	78	24	6.5	3.0
6	33	28	30	30	27	21	34	28	76	23	6.9	4.6
7	33	28	30	30	26	21	34	33	73	23	6.8	74
8	33	28	30	30	32	21	32	34	70	22	8.0	66
9	33	28	29	30	30	20	30	33	67	21	7.3	44
10	30	27	28	30	30	20	30	29	66	20	9.7	42
11	30	27	29	30	29	19	30	34	61	19	24	31
12	31	27	34	29	29	21	31	38	57	18	16	24
13	33	27	42	29	28	23	33	67	55	17	9.5	21
14	32	27	35	28	28	19	38	166	51	16	8.5	16
15	31	27	32	28	28	18	39	174	50	15	7.9	14
16	31	27	31	29	31	19	37	173	48	15	7.3	12
17	31	27	29	33	31	20	34	152	46	14	7.0	9.6
18	30	29	29	35	29	18	32	125	42	12	7.6	7.7
19	30	29	29	30	29	17	30	130	41	12	6.3	66
20	30	30	28	31	28	18	29	133	40	12	5.4	37
21	29	35	29	32	27	17	28	504	46	12	4.9	26
22	29	32	29	34	26	17	28	509	67	13	4.4	20
23	27	30	33	33	25	17	28	255	57	13	3.9	17
24	26	31	35	30	24	18	28	205	45	11	3.6	15
25	27	34	30	29	24	17	47	179	43	10	4.3	14
26	27	33	29	28	26	17	44	162	40	9.9	4.5	15
27	28	33	29	28	25	30	36	142	38	9.6	3.9	28
28	28	32	32	28	24	99	34	130	36	9.0	3.6	30
29	28	31	47	28	24	66	35	121	33	10	3.6	25
30	31	30	35	28	---	60	32	110	31	11	3.6	41
31	35	---	32	28	---	57	---	104	---	8.6	3.1	---
TOTAL	962	878	977	931	796	824	1051	3922	1721	509.1	216.3	715.6
MEAN	31.0	29.3	31.5	30.0	27.4	26.6	35.0	127	57.4	16.4	6.98	23.9
MAX	38	35	47	35	32	99	50	509	99	29	24	74
MIN	26	27	28	28	24	17	28	28	31	8.6	3.1	3.0
CFSM	.08	.07	.08	.07	.07	.07	.09	.31	.14	.04	.02	.06
IN.	.09	.08	.09	.08	.07	.07	.09	.35	.16	.05	.02	.06
AC-FT	1910	1740	1940	1850	1580	1630	2080	7780	3410	1010	429	1420

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CAL YR 1979  TOTAL  92959.0   MEAN  255    MAX  3260   MIN 26     CFSM .62   IN 8.39   AC-FT  184400
WTR YR 1980  TOTAL  13503.0   MEAN   36.9  MAX   509   MIN  3.0   CFSM .09   IN 1.22   AC-FT   26780
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08172000 SAN MARCOS RIVER AT LULING, TX

LOCATION.--Lat 29°39'54", long 97°38'59", Caldwell-Guadalupe County line, Hydrologic Unit 12100203, on left bank 390 ft (119 m) downstream from bridge on State Highway 80, 1.0 mi (1.6 km) south of U.S. Post Office at Luling, and 9.4 mi (15.1 km) upstream from Plum Creek.

DRAINAGE AREA.--838 mi^2 (2,170 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1939 to current year.

REVISED RECORDS.--WSP 918: 1940. WSP 1312: 1940(M), 1945(M), 1947(M). WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 322.05 ft (98.161 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Flow is affected at times by discharge from flood-detention pools of 17 floodwater-retarding structures with a combined detention capacity of 18,250 acre-ft (22.5 hm^3). These structures control runoff from 71.3 mi^2 (184.7 km^2) in the Town and York Creeks drainage basins. National Weather Service rain gage and gage-height telemeters at station.

AVERAGE DISCHARGE.--41 years, 369 ft^3/s (10.45 m^3/s), 267,300 acre-ft/yr (330 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 57,000 ft^3/s (1,610 m^3/s) Sept. 12, 1952, gage height, 34.95 ft (10.653 m); minimum daily, 43 ft^3/s (1.22 m^3/s) Aug. 12, 1951.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1839, 40.4 ft (12.31 m) in 1869 or 1870, from information by State Department of Highways and Public Transportation. Flood of May 29, 1929, reached a stage of 37.1 ft (11.31 m) and is the second highest known.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,460 ft^3/s (183 m^3/s) Sept. 7 at 1600 hours, gage height 25.89 ft (7.891 m), no other peak above base of 4,000 ft^3/s (113 m^3/s); minimum discharge, 80 ft^3/s (2.266 m^3/s) April 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	224	202	194	193	180	175	200	152	260	164	117	118
2	221	202	198	187	183	174	199	151	251	160	117	119
3	215	202	202	190	182	172	197	167	263	157	115	120
4	212	202	204	187	179	170	187	168	236	155	117	118
5	218	202	200	184	180	170	178	166	230	152	121	116
6	224	202	192	183	177	171	172	140	223	152	119	121
7	220	201	193	183	179	171	168	146	218	150	125	3040
8	218	197	191	182	180	170	164	160	214	149	127	474
9	217	199	190	182	193	168	158	165	210	147	127	216
10	214	197	192	183	187	168	158	154	206	146	135	201
11	216	198	202	183	183	168	156	152	203	144	147	183
12	218	194	207	180	180	166	155	150	202	140	138	168
13	219	193	213	179	176	166	165	166	198	139	129	136
14	217	190	213	179	175	166	161	697	196	138	129	149
15	215	188	208	180	176	166	160	301	192	137	128	142
16	213	192	202	176	178	166	162	667	191	135	129	142
17	211	201	197	179	183	164	161	502	187	136	128	138
18	212	202	191	177	182	163	158	296	181	131	126	137
19	211	212	190	182	184	163	153	1030	178	129	126	143
20	212	210	190	182	182	166	155	368	176	129	123	143
21	211	221	191	188	178	162	153	1030	177	131	119	188
22	205	216	192	205	175	158	151	883	208	133	122	179
23	203	206	198	232	172	160	150	663	188	138	119	164
24	202	202	205	197	172	159	149	652	204	130	119	156
25	200	206	198	190	171	167	167	387	186	126	123	149
26	200	202	191	186	174	165	183	351	177	135	119	167
27	201	201	191	181	174	173	131	326	174	126	118	186
28	202	198	199	179	175	202	161	305	172	123	118	186
29	206	193	200	181	173	236	157	293	170	122	119	163
30	211	192	200	183	---	234	153	276	167	121	119	176
31	208	---	210	180	---	206	---	265	---	116	119	---
TOTAL	6576	6017	6273	5751	5112	5352	4936	11365	6017	4281	3839	7858
MEAN	212	201	202	186	176	173	164	367	201	138	124	262
MAX	224	221	213	232	193	236	200	1030	263	164	147	3040
MIN	200	188	190	176	171	158	131	140	167	116	115	116
AC-FT	13040	11930	12440	11410	10140	10620	9790	22540	11930	8490	7610	15590

CAL YR 1979 TOTAL 209138 MEAN 574 MAX 6380 MIN 188 AC-FT 415200
WTR YR 1980 TOTAL 73466 MEAN 201 MAX 3040 MIN 115 AC-FT 145700

08172000 SAN MARCOS RIVER AT LULING, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: September 1961 to April 1966, October 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
OCT 22...	1305	206	603	24.5	260	18	76	18	19
DEC 03...	1154	202	596	11.5	290	57	90	17	16
JAN 14...	1110	177	601	14.5	290	49	82	20	19
FEB 25...	1222	170	587	18.0	260	35	73	18	20
APR 07...	1330	169	497	21.5	200	37	49	19	27
MAY 19...	1450	1130	404	23.5	150	30	49	7.5	21
JUL 03...	1110	160	562	30.0	250	28	72	17	18
SEP 22...	1245	171	584	27.5	260	19	73	18	19

DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
OCT 22...	.5	2.1	300	0	33	31	.3	11	338
DEC 03...	.4	1.7	290	0	30	35	.2	9.8	343
JAN 14...	.5	1.8	290	0	32	33	.2	9.5	340
FEB 25...	.5	1.7	270	0	44	37	.2	5.6	333
APR 07...	.8	1.8	200	0	32	40	.2	11	279
MAY 19...	.7	5.1	150	0	35	29	.5	14	235
JUL 03...	.5	1.7	270	0	27	34	.2	13	316
SEP 22...	.5	1.8	290	0	26	34	.3	12	327

08172400 PLUM CREEK AT LOCKHART, TX

LOCATION.--Lat 29°55'22", long 97°40'44", Caldwell County, Hydrologic Unit 12100203, on right bank 548 ft (167 m) upstream from bridge on U.S. Highway 183, 2.7 mi (4.3 km) north of Lockhart, 3.7 mi (6.0 km) upstream from Town Creek, 5.0 mi (8.0 km) downstream from Brushy Creek, and 30.4 mi (48.9 km) upstream from mouth.

DRAINAGE AREA.--112 mi² (290 km²).

PERIOD OF RECORD.--April 1959 to current year.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 431.19 ft (131.427 m) National Geodetic Vertical Datum of 1929. Apr. 30, 1959, to July 25, 1968, at site 548 ft (167 m) downstream at present datum.

REMARKS.--Records good. No known diversion above station. Flow at times is affected by discharge from the flood-detention pools of 17 floodwater-retarding structures with combined detention capacity of 24,850 acre-ft (30.6 hm³). These structures control runoff from 67.8 mi² (175.6 km²) above this station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--21 years, 47.6 ft³/s (1.348 m³/s), 34,490 acre-ft/yr (42.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,600 ft³/s (753 m³/s) Oct. 29, 1960, gage height, 20.62 ft (6.285 m); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1905, 22 ft (6.7 m) in June 1936 at present site; flood in 1951 reached a stage of 20 ft (6.1 m) at present site, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,690 ft³/s (76.2 m³/s) May 21 at 1430 hours, gage height, 15.08 ft (4.596 m), no other peak above base of 2,000 ft³/s (56.6 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.03	2.1	8.7	.00	12	.00	.00	.00
2	.00	.00	.00	.00	.03	1.7	5.3	.00	10	.00	.00	.00
3	.00	.00	.00	.00	.03	5.4	2.2	.00	7.5	.00	.00	.00
4	.00	.00	.00	.00	.01	5.5	1.5	.00	5.4	.00	.00	.00
5	.00	.00	.00	.00	.00	3.6	2.0	.00	4.2	.00	.00	.00
6	.00	.00	.00	.00	.00	1.9	2.0	.00	3.5	.00	.00	.00
7	.00	.00	.00	.00	.03	.37	.98	.00	2.7	.00	.00	.00
8	.00	.00	.00	.00	.07	.00	.40	.00	2.1	.00	.00	.00
9	.00	.00	.00	.00	.11	.00	.06	.00	1.3	.00	.00	.00
10	.00	.00	.00	.00	4.8	.11	.00	.00	.96	.00	.00	.14
11	.00	.00	.00	.00	4.8	.20	.00	.00	.60	.00	.00	.02
12	.00	.00	.00	.00	3.1	1.8	.00	.00	.27	.00	.00	.00
13	.00	.00	.00	.00	1.5	.10	.01	27	.05	.00	.00	.00
14	.00	.00	.00	.00	1.0	.00	.00	644	.00	.00	.00	.00
15	.00	.00	.00	.00	.69	.00	.00	415	.00	.00	.00	.00
16	.00	.00	.00	.00	1.1	.02	.00	335	.00	.00	.00	.00
17	.00	.00	.00	.00	9.9	.34	.00	241	.00	.00	.00	.00
18	.00	.00	.00	.00	11	.00	.00	126	.00	.00	.00	.00
19	.00	.00	.00	.00	7.9	.00	.00	88	.00	.00	.00	.00
20	.00	.00	.00	.00	4.9	.00	.00	67	.00	.00	.00	.00
21	.00	.00	.00	.00	3.3	.00	.00	1430	38	.00	.00	.00
22	.00	.00	.00	4.3	2.2	.00	.00	334	48	.00	.00	.00
23	.00	.00	.00	.12	1.1	.00	.00	186	36	.00	.00	.00
24	.00	.00	.00	.00	.60	.00	.00	105	23	.00	.00	.00
25	.00	.00	.00	1.4	.32	.00	.00	77	13	.00	.00	.00
26	.00	.00	.00	1.5	.00	.00	.00	59	6.3	.00	.00	.00
27	.00	.00	.00	.47	.00	18	.00	46	3.2	.00	.00	.00
28	.00	.00	.00	.46	.00	75	.00	36	1.4	.00	.00	.00
29	.00	.00	.00	.17	.08	35	.00	27	.50	.00	.00	.00
30	.00	.00	.00	.09	---	28	.00	20	.06	.00	.00	.00
31	.00	---	.00	.06	---	16	---	16	---	.00	.00	---
TOTAL	.00	.00	.00	8.57	58.60	195.14	23.15	4279.00	220.04	.00	.00	.16
MEAN	.000	.000	.000	.28	2.02	6.29	.77	138	7.33	.000	.000	.005
MAX	.00	.00	.00	4.3	11	75	8.7	1430	48	.00	.00	.14
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	17	116	387	46	8490	436	.00	.00	.3

CAL YR 1979 TOTAL 16943.32 MEAN 46.4 MAX 940 MIN .00 AC-FT 33610
WTR YR 1980 TOTAL 4784.66 MEAN 13.1 MAX 1430 MIN .00 AC-FT 9490

08173000 PLUM CREEK NEAR LULING, TX

LOCATION.--Lat 29°41'38", long 97°36'12", Caldwell County, Hydrologic Unit 12100203, near left bank on downstream side of pier of bridge on county road, 1.2 mi (1.9 km) upstream from West Fork, 1.9 mi (3.1 km) upstream from Southern Pacific Railroad Co. bridge, 2.2 mi (3.5 km) upstream from McNeil Creek, 2.9 mi (4.7 km) northeast of Luling, and at mile 7.5 (12.1 km).

DRAINAGE AREA.--309 mi² (800 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1930 to current year.

REVISED RECORDS.--WSP 1923: 1933. WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 321.57 ft (98.015 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 18, 1976, at datum 5 ft (1.5 m) higher.

REMARKS.--Water-discharge records fair. Low flow is slightly regulated by oilfield operation above station. At end of year, flow from 119 mi² (308 km²) above this station was partly controlled by 27 floodwater-retarding structures with a combined detention capacity of 41,840 acre-ft (51.6 hm³). No known diversion above station.

AVERAGE DISCHARGE.--50 years (water years 1931-80), 104 ft³/s (2.945 m³/s), 75,350 acre-ft/yr (92.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 78,500 ft³/s (2,220 m³/s) July 1, 1936, gage height, 30.7 ft (9.36 m), from floodmarks, present datum, from rating curve extended above 37,500 ft³/s (1,060 m³/s); no flow at times.

Maximum stage since at least 1868, that of July 1, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in December 1913 reached about same stage, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,300 ft³/s (65.1 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 19	1400	*2,940	83.3	20.14	6.139
Sept. 7	1700	2,860	81.0	19.38	5.907

Minimum daily discharge, 0.32 ft³/s (0.009 m³/s) Sept. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.4	9.9	7.2	10	7.2	12	16	5.7	27	4.2	1.6	1.5
2	5.8	6.1	7.4	9.7	7.3	15	14	6.0	22	3.6	1.3	1.3
3	5.7	5.8	7.5	9.5	8.2	10	13	5.4	19	3.1	1.2	1.3
4	4.8	5.8	8.2	9.4	8.6	10	12	5.0	17	2.4	1.2	.78
5	4.6	5.9	8.5	9.4	7.9	9.9	10	4.9	15	2.3	1.1	.32
6	4.9	6.0	8.7	9.2	8.0	9.5	9.7	4.6	13	2.5	.60	1.1
7	5.4	5.9	8.5	8.4	8.0	9.3	10	4.8	11	1.9	1.0	1380
8	6.1	6.3	8.6	8.4	9.7	9.2	8.6	8.6	11	2.2	1.3	241
9	5.5	6.2	8.8	8.7	14	8.6	7.5	12	10	1.9	1.4	25
10	4.8	5.8	8.9	9.0	15	8.2	7.2	8.6	9.5	1.9	1.5	12
11	4.8	6.4	9.4	9.4	11	8.1	7.2	6.0	8.8	2.4	3.6	6.9
12	5.6	6.4	9.9	9.6	10	8.0	6.8	5.8	8.1	2.5	6.4	5.7
13	6.2	6.8	13	9.3	10	7.4	7.0	7.6	7.4	2.3	3.0	5.3
14	6.1	6.7	13	9.9	10	6.8	12	351	6.9	2.2	2.5	4.6
15	6.1	7.0	10	9.7	10	4.5	8.6	635	6.5	2.2	2.5	4.3
16	5.9	7.4	9.4	10	10	9.5	7.6	529	6.2	1.8	2.5	3.9
17	5.9	7.8	8.2	11	13	7.4	6.7	337	5.8	1.8	2.5	3.9
18	6.0	7.9	7.3	12	12	5.8	6.8	210	5.7	1.8	3.4	3.6
19	5.8	8.3	8.2	11	14	6.2	6.7	2230	5.3	1.6	2.8	3.6
20	5.7	8.3	9.1	10	15	6.2	6.7	727	5.3	1.6	2.5	3.6
21	5.4	10	9.5	13	13	6.2	6.6	1240	4.9	1.6	2.0	3.6
22	4.9	21	9.8	26	13	5.9	6.3	1530	51	1.7	1.9	3.6
23	4.4	9.6	11	66	12	6.5	6.0	435	53	1.8	1.6	3.5
24	5.0	7.8	11	21	12	6.6	6.0	220	38	1.8	1.6	3.3
25	5.5	7.7	11	12	10	6.5	8.2	155	22	1.9	1.5	3.3
26	5.7	9.2	9.4	10	9.7	6.8	16	126	13	1.6	1.3	9.7
27	5.7	8.1	9.2	8.7	9.9	9.0	8.2	99	9.7	1.8	1.3	11
28	6.0	7.5	9.8	8.6	10	36	6.3	76	7.5	1.8	1.2	15
29	6.2	6.8	49	8.2	11	44	5.8	58	5.9	1.8	1.3	14
30	6.8	6.7	27	7.7	---	23	5.0	45	5.1	1.8	1.2	7.4
31	14	---	13	7.6	---	19	---	33	---	1.8	1.2	---
TOTAL	181.7	231.1	349.5	382.4	309.5	341.1	258.5	9121.0	430.6	65.6	60.00	1784.10
MEAN	5.86	7.70	11.3	12.3	10.7	11.0	8.62	294	14.4	2.12	1.94	59.5
MAX	14	21	49	66	15	44	16	2230	53	4.2	6.4	1380
MIN	4.4	5.8	7.2	7.6	7.2	4.5	5.0	4.6	4.9	1.6	.60	.32
AC-FT	360	458	693	758	614	677	513	18090	854	130	119	3540

CAL YR 1979 TOTAL 39434.70 MEAN 108 MAX 2080 MIN 4.4 AC-FT 78220
WTR YR 1980 TOTAL 13515.10 MEAN 36.9 MAX 2230 MIN .32 AC-FT 26810

08173000 PLUM CREEK NEAR LULING, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to current year.
WATER TEMPERATURES: October 1967 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 6,210 micromhos Feb. 27, 1977; minimum daily, 148 micromhos Dec. 1, 1968.
WATER TEMPERATURES: Maximum daily, 35.0°C July 24, 1969; minimum daily, 4.0°C Jan. 4, 1968.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,150 micromhos July 24; minimum daily, 294 micromhos May 22.
WATER TEMPERATURES: Maximum daily, 30.0°C Oct. 1, 2; minimum daily, 13.0°C Feb. 17, Apr. 13.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT 22...	1005	5.0	1470	8.0	22.0	400	91	140	13	160
DEC 31...	1500	11	1060	--	18.0	320	120	110	10	99
JAN 14...	0934	10	1510	--	10.5	430	150	150	14	140
MAR 31...	1500	15	1120	--	17.0	320	110	110	12	110
APR 30...	1500	2.0	1530	--	19.0	440	160	150	15	160
MAY 19...	1240	2800	379	--	23.5	98	42	34	3.2	30
JUL 03...	0925	2.9	1360	--	27.5	320	58	110	11	160
AUG 04...	0900	1.2	1990	--	26.5	440	51	150	15	280
SEP 30...	1400	4.6	1210	--	22.0	320	100	110	12	130

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 22...	3.5	5.4	380	0	100	240	.5	22	868
DEC 31...	2.4	4.6	240	0	88	180	.4	14	624
JAN 14...	2.9	4.1	350	0	84	260	.4	18	843
MAR 31...	2.7	5.1	260	0	120	150	.4	17	653
APR 30...	3.3	4.4	340	0	120	270	.4	20	907
MAY 19...	1.3	6.2	68	0	11	71	.2	9.3	198
JUL 03...	3.9	6.6	320	0	--	--	--	18	--
AUG 04...	5.8	7.1	470	0	110	380	.8	19	1140
SEP 30...	3.1	7.1	270	0	82	220	.4	22	717

08173000 PLUM CREEK NEAR LULING, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	181.7	1470	852	418	250	121	120	59	400
NOV.	1979	231.1	1430	825	515	240	147	120	74	400
DEC.	1979	349.5	1410	817	771	230	219	120	110	390
JAN.	1980	382.4	1400	809	835	230	237	120	120	390
FEB.	1980	309.5	1490	861	720	250	209	120	102	410
MAR.	1980	341.1	1440	832	767	240	221	120	109	400
APR.	1980	258.5	1480	858	599	250	175	120	84	410
MAY	1980	9121.0	585	336	8280	76	1880	54	1320	180
JUNE	1980	430.6	1020	588	683	150	180	88	102	290
JULY	1980	65.6	1630	945	167	290	52	130	23	430
AUG.	1980	60.00	1720	997	162	320	51	130	22	450
SEPT	1980	1784.10	462	265	1280	57	276	43	208	140
TOTAL		13515.10	**	**	15200	**	3770	**	2330	**
WTD. AVG.		37	723	417	**	100	**	64	**	210

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1540	1450	1500	1540	1540	1440	1200	1530	597	1290	1970	1840
2	1500	1320	1470	1420	1220	1470	1060	1620	859	1340	1930	1690
3	1520	1350	1460	1430	1530	1540	1560	1480	1230	1260	1970	1850
4	1380	1510	1450	1410	1460	1550	1140	1170	1300	1570	1890	1840
5	1540	1310	1490	1490	1560	1500	1450	1500	1280	1540	2020	1860
6	1340	1430	1480	1530	1510	1540	1620	1550	1370	1400	2060	1820
7	1540	1410	1480	1220	1540	1510	1520	1570	1480	1290	2010	350
8	925	1340	1470	1580	1560	1420	1520	1560	1560	952	1220	500
9	1540	1370	1440	1460	1580	1520	1570	1540	1660	1690	1400	654
10	1560	1430	1480	1480	1450	1580	1360	1580	1660	1540	1500	836
11	1550	1390	1350	1560	1480	1620	1620	1620	1720	1630	2000	1460
12	1340	1480	1400	1530	1530	1610	1640	1460	1700	1800	2050	1250
13	1540	1400	1470	1500	1420	1360	1570	1510	1450	1790	1430	1150
14	1580	1440	1420	1470	1460	1610	1560	750	1730	1640	2100	1640
15	1510	1430	1480	1540	1550	1600	1590	420	1250	1750	987	1820
16	1300	1460	1440	1480	1540	1500	1630	459	428	1840	1720	1330
17	1520	1230	1430	1550	1450	1480	1600	475	480	1830	1290	2080
18	1550	1470	1500	1510	1480	1640	1620	470	1420	1930	1920	1710
19	1450	1550	1480	1480	1500	1590	1550	379	1460	1860	1740	1440
20	1990	1430	1450	1510	1460	1630	1590	1490	1620	628	1470	1770
21	1480	1550	1440	1530	1330	1660	1600	943	1810	1990	1650	1570
22	1470	1440	1480	1400	1490	1640	1590	294	1000	1960	1700	1530
23	1490	1360	1500	1170	1450	1480	1630	438	570	1940	1710	1440
24	1520	1400	1450	1480	1490	1660	1610	445	600	2150	1490	1810
25	1500	1450	1460	1220	1500	1500	1620	570	622	1720	1690	1650
26	1460	1440	1530	1360	1490	1660	1470	604	800	2000	1590	1570
27	1520	1390	1490	1530	1530	1430	1570	595	917	1930	1630	1740
28	1480	1520	1510	1300	1540	1460	1300	490	625	1980	1400	1570
29	1440	1460	1330	1220	1570	1320	1490	489	1610	2010	1810	1310
30	1460	1470	1070	1190	---	990	1540	590	1120	1500	1770	1230
31	1350	---	1450	1430	---	1130	---	700	---	2010	1840	---
MEAN	1480	1420	1450	1440	1490	1500	1510	977	1200	1670	1710	1480

08173000 PLUM CREEK NEAR LULING, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30.0	24.0	18.0	18.0	17.0	14.0	19.0	18.0	18.0	25.0	28.0	22.0
2	30.0	24.0	16.0	18.0	17.0	14.0	19.0	21.0	21.0	25.0	18.0	20.0
3	28.0	24.0	18.0	16.0	18.0	16.0	16.0	18.0	22.0	25.0	18.0	22.0
4	26.0	20.0	20.0	16.0	18.0	18.0	19.0	18.0	22.0	23.0	25.0	23.0
5	28.0	24.0	18.0	18.0	18.0	18.0	17.0	22.0	17.0	23.0	25.0	27.0
6	24.0	18.0	18.0	16.0	18.0	18.0	17.0	22.0	---	23.0	25.0	---
7	24.0	18.0	20.0	18.0	---	18.0	20.0	21.0	---	25.0	23.0	---
8	24.0	22.0	20.0	18.0	---	18.0	20.0	20.0	18.0	24.0	28.0	18.0
9	26.0	22.0	16.0	18.0	15.0	14.0	21.0	21.0	21.0	26.0	18.0	20.0
10	24.0	20.0	20.0	18.0	17.0	18.0	21.0	20.0	18.0	26.0	22.0	22.0
11	22.0	18.0	20.0	18.0	18.0	18.0	21.0	20.0	23.0	24.0	26.0	19.0
12	24.0	20.0	18.0	16.0	18.0	18.0	14.0	20.0	23.0	26.0	20.0	20.0
13	22.0	20.0	18.0	16.0	18.0	15.0	13.0	18.0	23.0	22.0	18.0	20.0
14	22.0	20.0	16.0	18.0	19.0	17.0	16.0	---	18.0	26.0	27.0	20.0
15	26.0	20.0	18.0	18.0	---	17.0	14.0	---	18.0	27.0	27.0	20.0
16	26.0	---	18.0	16.0	14.0	14.0	18.0	19.0	17.0	28.0	20.0	24.0
17	22.0	18.0	18.0	16.0	13.0	17.0	19.0	18.0	23.0	28.0	20.0	27.0
18	26.0	18.0	18.0	18.0	15.0	17.0	20.0	19.0	23.0	24.0	27.0	27.0
19	26.0	22.0	19.0	16.0	19.0	17.0	20.0	20.0	---	24.0	26.0	24.0
20	26.0	22.0	19.0	18.0	19.0	18.0	17.0	21.0	20.0	20.0	26.0	22.0
21	22.0	20.0	20.0	18.0	19.0	19.0	21.0	21.0	21.0	20.0	26.0	20.0
22	24.0	16.0	16.0	---	19.0	19.0	21.0	21.0	20.0	18.0	28.0	26.0
23	20.0	18.0	16.0	17.0	16.0	14.0	21.0	21.0	23.0	27.0	19.0	22.0
24	22.0	20.0	16.0	18.0	16.0	16.0	21.0	22.0	23.0	18.0	20.0	20.0
25	24.0	20.0	18.0	18.0	18.0	18.0	16.0	18.0	24.0	27.0	27.0	26.0
26	22.0	20.0	18.0	18.0	16.0	18.0	18.0	22.0	24.0	18.0	27.0	24.0
27	20.0	16.0	16.0	16.0	18.0	17.0	16.0	22.0	25.0	18.0	20.0	26.0
28	20.0	20.0	16.0	17.0	18.0	19.0	21.0	22.0	20.0	26.0	20.0	20.0
29	24.0	16.0	18.0	17.0	16.0	17.0	21.0	18.0	20.0	18.0	27.0	26.0
30	20.0	16.0	16.0	16.0	---	19.0	19.0	---	20.0	19.0	21.0	22.0
31	24.0	---	18.0	17.0	---	17.0	---	18.0	---	28.0	20.0	---
MEAN	24.0	20.0	18.0	17.0	17.0	17.0	18.5	20.0	21.0	23.5	23.5	22.5

08175000 SANDIES CREEK NEAR WESTHOFF, TX

LOCATION.--Lat 29°12'54", long 97°26'57", De Witt County, Hydrologic Unit 12100202, on left bank 100 ft (30 m) downstream from bridge on county highway, 1.9 mi (3.1 km) upstream from Birds Creek, 2.0 mi (3.2 km) northeast of Westhoff, and 20.4 mi (32.8 km) upstream from mouth.

DRAINAGE AREA.--549 mi^2 (1,422 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1930 to November 1934, August 1959 to current year.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 178.27 ft (54.337 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 9, 1934, water-stage recorder at site 150 ft (46 m) upstream at datum 0.86 ft (0.262 m) higher. Aug. 10, 1959, to Feb. 2, 1960, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records good. No known diversion above station.

AVERAGE DISCHARGE.--25 years (water years 1931-34, 1960-80), 132 ft^3/s (3.738 m^3/s), 3.27 in/yr (83 mm/yr), 95,630 acre-ft/yr (118 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 79,700 ft^3/s (2,260 m^3/s) Sept. 22, 1967, gage height, 32.34 ft (9.857 m), from rating curve extended above 21,000 ft^3/s (595 m^3/s) on basis of slope-area measurement of 92,700 ft^3/s (2,630 m^3/s); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1864, 92,700 ft^3/s (2,630 m^3/s) July 2, 1936, gage height, 33.1 ft (10.09 m), from floodmarks, on basis of computation of peak flow, at present site and datum. Flood in October 1913 reached a stage of 26.0 ft (7.92 m), present site and datum, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,840 ft^3/s (52.1 m^3/s) Sept. 9 at 1800 hours, gage height, 17.73 ft (5.404 m), no peak above base of 2,000 ft^3/s (56.6 m^3/s); minimum, 0.64 ft^3/s (0.018 m^3/s) Aug. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.4	5.7	7.0	27	9.0	9.5	11	6.7	46	2.9	.82	1.3
2	6.4	5.5	7.4	20	9.3	9.3	11	6.6	30	2.4	.72	1.2
3	6.4	5.6	7.5	15	9.6	9.2	11	6.3	22	1.9	.69	1.3
4	5.9	5.7	7.8	12	9.8	9.1	11	5.5	18	1.6	1.2	1.4
5	5.1	5.9	8.1	11	9.9	9.6	9.9	5.5	15	1.7	1.3	1.4
6	5.0	5.8	7.9	9.8	9.9	9.7	9.6	6.1	13	1.6	1.2	3.5
7	4.9	5.6	7.9	9.6	9.7	9.6	9.9	6.0	12	1.4	1.2	28
8	4.9	5.7	8.6	9.6	30	9.8	9.8	6.2	11	1.3	1.2	388
9	5.1	6.1	8.8	9.3	108	11	9.2	6.4	9.6	1.2	1.2	1550
10	5.0	6.1	8.8	9.1	121	11	8.5	6.3	8.6	1.2	1.5	856
11	4.8	6.1	9.0	9.5	58	11	7.9	6.5	7.5	1.4	3.2	98
12	4.9	6.1	12	9.6	33	11	7.8	6.8	7.2	1.4	3.4	48
13	4.8	6.2	19	9.6	24	9.8	7.4	7.3	7.5	1.5	24	31
14	5.2	6.1	27	9.6	19	9.5	7.3	10	7.1	1.6	17	23
15	5.1	5.9	30	9.8	17	9.3	7.3	69	6.6	1.6	9.0	19
16	5.1	5.7	24	9.7	15	9.5	7.3	258	6.3	1.6	5.6	15
17	4.9	6.3	18	9.2	14	10	7.1	618	6.1	1.4	4.4	13
18	6.1	7.0	13	8.8	13	9.7	7.1	430	5.6	1.3	3.3	12
19	6.1	7.0	10	9.3	13	9.3	7.1	601	5.2	1.2	2.5	11
20	5.1	7.4	9.2	25	12	9.5	7.3	848	5.1	1.1	2.1	9.8
21	5.2	8.2	9.0	33	12	9.4	7.1	1310	4.8	1.1	2.3	9.2
22	5.1	7.9	9.1	25	12	9.1	7.0	855	4.6	1.1	2.3	8.5
23	4.8	10	9.4	68	12	9.1	6.8	335	4.4	1.2	2.1	8.0
24	4.6	10	9.8	50	12	9.1	6.7	128	4.1	1.4	2.0	7.8
25	4.5	10	10	31	11	9.0	6.7	68	3.9	1.2	1.8	7.2
26	4.5	9.2	10	22	11	9.1	6.6	49	3.5	1.3	1.7	7.1
27	4.3	8.6	11	16	10	10	7.0	38	3.5	1.3	1.6	15
28	5.3	8.1	13	13	9.6	13	7.6	51	3.5	1.4	1.4	25
29	5.7	7.6	29	11	9.3	12	7.1	207	3.2	1.5	1.4	22
30	5.9	7.1	32	11	---	12	6.9	208	3.1	1.3	1.5	21
31	6.5	---	35	9.5	--	12	---	104	---	1.1	1.4	---
TOTAL	163.6	208.2	428.3	532.0	643.1	310.2	244.0	6269.2	288.0	45.2	105.03	3242.7
MEAN	5.28	6.94	13.8	17.2	22.2	10.0	8.13	202	9.60	1.46	3.39	108
MAX	6.5	10	35	68	121	13	11	1310	46	2.9	24	1550
MIN	4.3	5.5	7.0	8.8	9.0	9.0	6.6	5.5	3.1	1.1	.69	1.2
CFSM	.01	.01	.03	.03	.04	.02	.02	.37	.02	.003	.006	.20
IN.	.01	.01	.03	.04	.04	.02	.02	.42	.02	.00	.01	.22
AC-FT	325	413	850	1060	1280	615	484	12430	571	90	208	6430

CAL YR 1979 TOTAL 86321.90 MEAN 236 MAX 5410 MIN 4.3 CFSM .43 IN 5.85 AC-FT 171200
WTR YR 1980 TOTAL 12479.53 MEAN 34.1 MAX 1550 MIN .69 CFSM .06 IN .85 AC-FT 24750

08175000 SANDIES CREEK NEAR WESTHOFF, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: April 1962 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
NOV 01...	1237	5.8	1310	7.8	17.5	--	--	180	0	52	12
DEC 11...	1000	9.0	1294	7.9	14.0	--	--	200	0	59	13
JAN 25...	1343	30	1010	--	12.0	--	--	130	0	37	7.9
MAR 06...	1232	9.6	1300	--	15.0	--	--	260	54	74	18
APR 18...	1120	6.9	1460	8.2	19.0	--	--	240	0	72	15
MAY 30...	0900	219	240	7.3	26.5	--	--	34	0	10	2.3
JUL 16...	1124	1.5	1360	7.8	27.0	3.2	40	200	0	59	13
AUG 27...	1132	1.5	1240	7.9	26.0	3.2	39	130	0	40	8.4

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
NOV 01...	210	6.8	11	330	0	86	220	.5	19	773
DEC 11...	210	6.4	11	330	0	100	210	.4	19	785
JAN 25...	160	6.2	9.1	180	0	80	190	.2	15	588
MAR 06...	180	4.9	12	250	0	160	210	.3	11	789
APR 18...	230	6.4	1.3	340	0	120	260	.5	16	882
MAY 30...	33	2.4	6.4	57	0	19	33	.1	14	146
JUL 16...	200	6.1	14	320	0	90	230	.4	23	787
AUG 27...	210	7.9	13	330	0	48	210	.6	22	715

08175800 GUADALUPE RIVER AT CUERO, TX

LOCATION.--Lat 29°03'57", long 97°19'16", De Witt County, Hydrologic Unit 12100204, on left bank at downstream side of bridge on U.S. Highways 77-A, 87, and 183, 2.1 mi (3.4 km) upstream from Gohlke Creek, 2.4 mi (3.9 km) southwest of Cuero, 4.2 mi (6.8 km) downstream from Sandies Creek, and at mile 100.6 (161.9 km).

DRAINAGE AREA.--4,934 mi² (12,779 km²), of which 1,432 mi² (3,709 km²) is above Canyon Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1902 to December 1906, August 1916 to December 1935, January 1964 to current year. Published as "near Cuero" 1902-6, and as "below Cuero" 1916-35. Gage-height records collected at site 7.1 mi (11.4 km) upstream from Sandies Creek from 1941 to 1966 (published in reports of the National Weather Service) and at present site since June 12, 1968.

REVISED RECORDS.--WRD TX-68-1, TX-69-1: Drainage areas at all sites.

GAGE.--Water-stage recorder. Datum of gage is 128.64 ft (39.209 m) National Geodetic Vertical Datum of 1929. Dec. 26, 1902, to June 1903, nonrecording gage at site 7.1 mi (11.4 km) upstream at different datum, gage heights moved to site 3.3 mi (5.3 km) upstream from present site before computation; July 1903 to December 1906 nonrecording gage 3.3 mi (5.3 km) upstream at different datum; Aug. 19, 1916, to Dec. 16, 1935, water-stage recorder at site 5.0 mi (8.0 km) downstream at datum 3.19 ft (0.972 m) lower.

REMARKS.--Water-discharge records good. Since July 21, 1962, flow is regulated by Canyon Lake (station 08167700) 202.4 mi (325.7 km) upstream. Flow below New Braunfels is partly regulated by a series of small power dams, combined capacity of six largest dams 33,550 acre-ft (41.4 hm³). Flow is affected at times by discharge from the flood-detention pools of 52 floodwater-retarding structures with combined detention capacity of 78,620 acre-ft (96.9 hm³). These structures control runoff from 269 mi² (697 km²) in the Comal, San Marcos, and Plum Creek drainage basins. Many small diversions above station. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--20 years (water years 1904-6, 1917-18, 1921-35) prior to regulation by Canyon Lake, 1,303 ft³/s (36.90 m³/s), 944,000 acre-ft/yr (1.16 km³/yr); 16 years (water years 1965-80) regulated, 2,104 ft³/s (59.59 m³/s), 1,524,000 acre-ft/yr (1.88 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 101,000 ft³/s (2,860 m³/s) May 30, 1929, gage height, 35.2 ft (10.73 m), site and datum then in use, from rating curve extended above 45,000 ft³/s (1,270 m³/s); maximum gage height, 36.90 ft (11.247 m) May 14, 1972; minimum daily discharge, 79 ft³/s (2.24 m³/s) Aug. 13, 14, 1967.

Floods at this station since at least 1900 occurred Mar. 1, 1903, 43.0 ft (13.11 m), at different site and datum; Oct. 20, 1919, 32.2 ft (9.81 m), site and datum then in use; May 30, 1929, 35.2 ft (10.73 m), site and datum then in use; all from information by local residents.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, probably occurred July 2, 1936, 44.33 ft (13.512 m), present site and datum, from information by State Department of Highways and Public Transportation. Other floods at this station occurred Oct. 4, 1913, 37.57 ft (11.451 m), at different site and datum; Dec. 6, 1913, 34.57 ft (10.537 m), at different site and datum; June 21, 1961, 37.0 ft (11.28 m), present site and datum; all from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,540 ft³/s (242 m³/s) Sept. 9 at 1500 hours, gage height, 16.54 ft (5.041 m); minimum, 397 ft³/s (11.2 m³/s) Aug. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1030	876	759	1010	879	804	900	779	1280	915	443	448
2	1050	856	830	947	845	848	877	734	1240	630	441	444
3	1070	846	808	903	875	843	883	769	1220	670	437	446
4	1070	830	833	868	880	865	891	779	1150	708	422	452
5	977	826	853	872	893	767	869	774	1170	698	409	466
6	909	837	856	846	878	823	799	772	1140	665	410	482
7	889	839	841	864	859	828	807	764	1100	680	417	479
8	911	824	873	856	1000	834	841	762	965	666	420	2650
9	901	844	806	865	1600	814	862	771	1030	637	428	8050
10	863	846	840	845	1160	841	821	749	1140	646	442	4680
11	900	822	817	851	1120	870	801	783	1040	618	442	1560
12	872	839	977	826	959	969	759	788	1040	595	472	944
13	889	815	1170	869	919	1020	756	764	1070	580	504	795
14	872	823	992	839	847	633	795	779	993	555	523	930
15	888	802	893	859	849	804	852	987	926	515	498	975
16	902	816	820	839	829	778	808	2820	922	503	487	974
17	879	842	788	863	832	778	775	3960	912	482	478	954
18	873	846	827	838	826	1060	815	4560	913	467	474	923
19	889	820	859	857	869	765	799	5490	892	466	461	979
20	872	869	928	871	911	747	789	6080	845	455	470	879
21	888	885	832	1030	963	771	753	8040	844	457	467	910
22	855	884	761	1150	960	788	762	7850	874	456	460	938
23	850	928	876	1580	796	809	785	7450	1240	457	467	950
24	843	872	865	1790	794	798	759	5530	1140	459	465	947
25	840	856	914	1450	833	836	762	2490	957	462	458	871
26	840	855	867	1030	956	841	766	1810	882	460	455	704
27	822	883	851	922	795	849	815	1620	785	456	451	702
28	842	870	869	902	823	925	830	1510	830	451	446	796
29	848	965	899	881	805	912	745	1460	765	446	440	838
30	849	837	1020	869	---	959	765	1660	770	448	448	816
31	855	---	1170	844	---	898	---	1480	---	449	448	---
TOTAL	27838	25553	27294	29836	26555	26077	24241	75564	30075	17152	14083	36982
MEAN	898	852	880	962	916	841	808	2438	1003	553	454	1233
MAX	1070	965	1170	1790	1600	1060	900	8040	1280	915	523	8050
MIN	822	802	759	826	794	633	745	734	765	446	409	444
AC-FT	55220	50680	54140	59180	52670	51720	48080	149900	59650	34020	27930	7335

CAL YR 1979 TOTAL 1170558 MEAN 3207 MAX 18000 MIN 759 AC-FT 2322000
WTR YR 1980 TOTAL 361250 MEAN 987 MAX 8050 MIN 409 AC-FT 716500

08175800 GUADALUPE RIVER AT CUERO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: March 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT 31...	1537	861	588	7.9	22.5	--	--	250	12	72	17
DEC 11...	1200	812	623	8.0	13.5	--	--	260	27	78	17
JAN 25...	1130	1460	455	--	12.5	--	--	170	28	49	11
MAR 06...	0930	834	619	--	14.5	--	--	250	31	73	17
APR 18...	0945	812	605	8.3	19.5	--	--	260	27	73	18
MAY 29...	1750	1540	475	8.1	28.0	--	--	190	30	58	12
JUL 15...	1437	510	523	8.3	32.0	8.3	114	210	22	58	16
AUG 26...	1527	462	559	8.4	31.0	8.0	107	200	15	55	16

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 31...	27	.7	2.4	290	0	35	38	.3	11	346
DEC 11...	29	.8	2.0	290	0	32	40	.3	11	352
JAN 25...	31	1.0	5.2	170	0	39	38	.2	12	269
MAR 06...	30	.8	2.2	270	0	37	47	.3	7.6	347
APR 18...	32	.9	2.3	280	0	38	43	.3	32	377
MAY 29...	24	.8	3.6	200	0	31	29	.2	15	271
JUL 15...	23	.7	2.4	230	0	27	34	.4	14	288
AUG 26...	30	.9	2.5	230	0	27	44	.3	15	303

08176500 GUADALUPE RIVER AT VICTORIA, TX
(National stream-quality accounting network)

LOCATION.--Lat 28°47'34", long 97°00'46", Victoria County, Hydrologic Unit 12100204, on left bank just upstream from pier of upstream bridge of two bridges on U.S. Highway 59 in Victoria, 1,300 ft (396 m) upstream from Southern Pacific Railroad Co. bridge, 15 mi (24 km) upstream from Coleto Creek, and at mile 50.7 (81.6 km).

DRAINAGE AREA.--5,198 mi^2 (13,463 km^2), of which 1,432 mi^2 (3,709 km^2) is above Canyon Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1934 to current year. Gage-height records collected in this vicinity since 1904 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 29.15 ft (8.885 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Since July 21, 1962, flow is regulated by Canyon Lake (station 08167700) 252.3 mi (406.1 km) upstream. Many diversions above station. Records furnished by the city of Victoria show a discharge of about 7,300 acre-ft (9.00 hm^3) of sewage effluent below station. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08175800.

AVERAGE DISCHARGE.--27 years (water years 1936-62) prior to regulation by Canyon Lake, 1,626 ft^3/s (46.05 m^3/s), 1,178,000 acre-ft/yr (1.45 km^3/yr); 18 years (water years 1963-80) regulated, 2,036 ft^3/s (57.66 m^3/s), 1,475,000 acre-ft/yr (1.82 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 179,000 ft^3/s (5,070 m^3/s) July 3, 1936, gage height, 31.22 ft (9.516 m); minimum daily, 14 ft^3/s (0.40 m^3/s) Aug. 20, 1956.
Maximum stage since at least 1833, that of July 3, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1, 1929, reached a stage of 30.2 ft (9.21 m), present site and datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,600 ft^3/s (329 m^3/s) May 19 at 1500 hours, gage height, 24.68 ft (7.522 m); minimum, 387 ft^3/s (11.0 m^3/s) Sept. 4; minimum gage height, 4.45 ft (1.356 m) Aug. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1080	894	800	1050	876	772	818	685	1520	900	448	398
2	1030	919	726	903	903	792	895	687	1390	906	441	402
3	1060	880	786	883	886	828	817	654	1360	683	433	395
4	1070	882	780	814	900	831	793	688	1310	733	428	403
5	1060	859	783	807	903	830	822	686	1270	776	414	417
6	977	866	824	786	916	752	752	681	1300	740	402	478
7	926	874	800	776	900	802	706	677	1250	720	509	548
8	912	870	804	783	943	812	733	776	1180	733	420	457
9	927	861	817	783	1610	812	767	714	1080	708	416	4960
10	904	866	760	790	1350	789	763	688	1140	689	599	7440
11	885	862	790	783	1170	820	746	669	1200	692	499	3530
12	908	845	810	766	1050	852	715	704	1120	656	430	1300
13	890	848	1000	773	963	976	699	691	1110	638	449	988
14	895	821	1060	786	902	870	689	681	1140	623	479	825
15	886	828	930	770	853	615	734	707	1050	595	494	1000
16	911	800	821	776	844	780	759	1510	997	361	518	980
17	913	831	743	763	818	773	718	3640	999	543	465	997
18	888	852	720	786	831	752	695	4360	981	519	444	950
19	899	824	780	763	820	976	754	10100	988	506	433	952
20	897	828	806	921	880	677	703	7440	964	512	418	980
21	899	876	862	4020	918	688	712	6990	926	491	424	893
22	894	890	736	2080	970	713	665	7980	950	493	418	932
23	870	886	723	1450	891	726	689	7550	1020	491	411	940
24	878	896	807	1750	775	746	690	7160	1300	485	413	964
25	867	852	804	1750	786	742	675	4620	1120	482	413	957
26	870	831	845	1300	846	779	664	2440	1050	484	407	925
27	863	828	783	1010	909	786	682	1940	900	490	405	833
28	854	862	810	947	762	796	741	1740	862	486	419	773
29	872	852	890	926	830	862	731	1630	900	461	407	821
30	938	913	866	910	---	847	653	1680	828	457	404	1580
31	915	---	981	890	---	874	---	1720	---	452	401	---
TOTAL	28638	25796	25447	33295	27005	24670	21980	82888	33205	18705	13661	38018
MEAN	924	860	821	1074	931	796	733	2674	1107	603	441	1267
MAX	1080	919	1060	4020	1610	976	895	10100	1520	906	599	7440
MIN	854	800	720	763	762	615	653	654	828	452	401	395
AC-FT	56800	51170	50470	66040	53560	48930	43600	164400	65860	37100	27100	75410

CAL YR 1979 TOTAL 1207041 MEAN 3307 MAX 18000 MIN 720 AC-FT 2394000
WTR YR 1980 TOTAL 373308 MEAN 1020 MAX 10100 MIN 395 AC-FT 740500

08176500 GUADALUPE RIVER AT VICTORIA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1945 to September 1946, October 1948 to current year. Sediment records: October 1972 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1945 to current year.
WATER TEMPERATURES: November 1950 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,950 micromhos on several days during January 1946; minimum daily, 155 micromhos Sept. 22, 1967.
WATER TEMPERATURES: Maximum daily, 32.0°C Aug. 4, 27, 1952; minimum daily, 2.0°C Jan. 11, 12, 1962, Jan. 24, 1963.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 778 micromhos Jan. 10; minimum daily, 200 micromhos Sept. 10.
WATER TEMPERATURES: Maximum daily, 31.0°C July 1-3; minimum daily, 9.0°C Dec. 18, 19, Feb. 1-3.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 02...	1308	1060	608	8.0	26.0	7.7	7.6	93	1.6	39	44
NOV 06...	0957	940	607	8.0	19.5	6.8	8.2	88	1.9	80	220
DEC 12...	0917	783	630	8.2	15.0	6.6	8.3	81	1.1	360	96
JAN 17...	0935	776	649	8.1	16.5	4.9	9.9	100	1.3	560	750
FEB 12...	0920	1070	485	8.2	10.5	39	10.4	92	1.4	3700	3500
MAR 11...	1540	821	634	8.0	20.0	6.9	7.1	78	1.3	56	K10
APR 08...	1450	763	678	8.1	22.0	36	8.2	92	1.5	180	41
MAY 06...	1435	708	609	8.1	26.0	15	8.4	102	1.4	K20	70
JUN 11...	0830	1220	571	8.3	27.0	12	6.8	84	.7	K25	370
JUL 09...	1420	726	544	8.1	31.5	17	7.4	101	2.8	42	34
AUG 07...	1045	399	561	7.4	30.0	13	5.6	74	1.0	440	58
SEP 10...	1438	7600	192	--	25.0	240	6.2	74	3.6	K87	4600

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 02...	250	16	72	16	26	.7	2.4	280	0	32	37
NOV 06...	250	25	74	17	31	.8	2.2	280	0	34	41
DEC 12...	260	23	78	16	33	.9	2.1	290	0	32	45
JAN 17...	250	24	75	16	30	.8	2.1	280	0	34	47
FEB 12...	190	18	59	11	28	.9	3.4	210	0	33	41
MAR 11...	250	33	74	17	36	1.0	2.1	270	0	37	50
APR 08...	280	47	81	18	40	1.0	2.4	280	0	36	58
MAY 06...	240	30	68	17	33	.9	2.2	270	0	32	42
JUN 11...	240	28	69	16	25	.7	2.6	270	0	32	28
JUL 09...	220	25	61	17	26	.8	2.3	240	0	28	37
AUG 07...	210	21	58	16	31	.9	2.4	240	0	29	46
SEP 10...	75	8	24	3.7	9.5	.5	3.3	82	0	8.4	13

08176500 GUADALUPE RIVER AT VICTORIA, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)
OCT 02...	.2	12	330	340	.92	.92	.130	.010	.39	.46
NOV 06...	.3	13	358	356	1.4	1.2	.030	.040	.28	.28
DEC 12...	.2	9.6	370	364	1.2	1.2	.000	.000	.48	.52
JAN 17...	.3	10	361	356	1.3	.91	.020	.010	.39	.38
FEB 12...	.1	13	288	296	1.1	.79	.050	.040	.67	.55
MAR 11...	.3	7.7	367	359	.87	.39	.000	.000	.35	.40
APR 08...	.2	15	396	394	1.2	1.3	.010	.000	.57	.51
MAY 06...	.3	12	344	336	.81	.75	.010	.040	.55	.53
JUN 11...	.3	15	335	324	.79	.78	.020	.000	1.4	.69
JUL 09...	.4	15	319	305	.67	.67	.060	.050	.53	.43
AUG 07...	.3	16	331	314	.31	.31	.030	.010	1.1	.66
SEP 10...	.2	3.7	106	109	.68	.68	.070	.080	4.9	2.0

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	CARBON, ORGANIC SUSPENDED (MG/L AS C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 02...	.52	.47	.040	.010	2.1	--	--	79	226	62
NOV 06...	.31	.32	.880	.020	--	5.9	.0	83	211	76
DEC 12...	.48	.52	.080	.020	1.8	--	--	65	137	42
JAN 17...	.41	.39	.090	.040	5.7	--	--	77	161	63
FEB 12...	.72	.59	.160	.070	--	3.3	--	63	182	92
MAR 11...	.35	.40	.070	.040	2.7	--	--	51	113	70
APR 08...	.58	.51	.130	.060	6.3	--	--	53	109	90
MAY 06...	.56	.57	.070	.040	--	2.5	.7	75	143	70
JUN 11...	1.4	.69	.100	.030	5.2	--	--	99	326	86
JUL 09...	.59	.48	.060	.040	3.6	--	--	63	123	98
AUG 07...	1.1	.67	.070	.010	--	13	.1	72	78	89
SEP 10...	5.0	2.1	.440	.070	31	--	--	1210	24800	84

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUSPENDED TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)
NOV 06...	0957	2	0	2	300	200	80	0	0	2	0
DEC 12...	0917	--	--	--	--	--	--	--	--	--	--
FEB 12...	0920	2	0	2	200	0	200	0	0	0	0
MAR 11...	1540	--	--	--	--	--	--	--	--	--	--
MAY 06...	1435	1	0	1	100	20	80	0	--	<1	0
JUN 11...	0830	--	--	--	--	--	--	--	--	--	--
AUG 07...	1045	3	0	3	100	10	90	0	0	3	10
SEP 10...	1438	--	--	--	--	--	--	--	--	--	--

08176500 GUADALUPE RIVER AT VICTORIA, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)
NOV 08...	0	0	0	0	<3	0	0	0	320	290	30
DEC 13...	--	--	--	--	--	--	--	--	--	--	--
FEB 12...	0	0	0	0	0	2	2	0	1300	1200	60
MAR 11...	--	--	--	--	--	--	--	--	--	--	--
MAY 08...	0	0	0	--	<3	2	0	2	5700	--	<10
JUN 11...	--	--	--	--	--	--	--	--	--	--	--
AUG 07...	10	0	0	--	<3	3	2	1	660	630	10
SEP 10...	--	--	--	--	--	--	--	--	--	--	--

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI)
NOV 08...	17	15	2	30	30	4	.1	.1	.0	5	5
DEC 13...	--	--	--	--	--	--	--	--	--	--	--
FEB 12...	0	0	0	60	50	10	.3	.0	.4	0	0
MAR 11...	--	--	--	--	--	--	--	--	--	--	--
MAY 08...	6	6	0	30	30	3	.2	.1	.1	0	3
JUN 11...	--	--	--	--	--	--	--	--	--	--	--
AUG 07...	3	0	0	27	27	1	.2	.2	.0	2	2
SEP 10...	--	--	--	--	--	--	--	--	--	--	--

DATE	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV 08...	0	1	1	0	0	0	0	40	30	10
DEC 13...	--	--	--	--	0	--	--	--	--	--
FEB 12...	0	0	0	0	0	0	0	20	10	10
MAR 11...	--	--	--	--	2	--	--	--	--	--
MAY 08...	1	0	0	1	0	0	0	10	--	<3
JUN 11...	--	--	--	--	0	--	--	--	--	--
AUG 07...	0	1	0	1	0	0	0	10	5	6
SEP 10...	--	--	--	--	0	--	--	--	--	--

08176500 GUADALUPE RIVER AT VICTORIA, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	CHLORDANE, TOTAL (UG/L)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG)
FEB 12...	0920	.0	0	.00	.00	1.0	.0	0	.00	.0	.00	.0
AUG 07...	1045	.0	0	.00	.00	.0	.0	0	.00	.2	.00	.2

DATE	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIAZINON, TOTAL (UG/L)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIELDRIN TOTAL (UG/L)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ETHION, TOTAL (UG/L)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR, TOTAL (UG/L)
FEB 12...	.00	.0	.00	--	.00	.0	.00	.00	.0	.00	--	.00
AUG 07...	.00	.0	.00	.0	.00	.0	.00	.00	.0	.00	.0	.00

DATE	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)	MALATHION, TOTAL (UG/L)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	METHOXYCHLOR, TOTAL (UG/L)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARATHION, TOTAL (UG/L)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG)	METHYL TRITHION, TOTAL (UG/L)
FEB 12...	.0	.00	.0	.00	.0	.00	--	.00	.0	.00	--	.00
AUG 07...	.0	.00	.0	.00	.0	.00	.0	.00	.0	.00	.0	.00

DATE	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	TOXAPHENE, TOTAL (UG/L)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	TOTAL TRITHION (UG/L)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
FEB 12...	--	.00	.00	--	0	0	.00	--	.05	.04	.00
AUG 07...	.0	.00	.00	.0	0	0	.00	.0	--	--	--

DATE	LENGTH OF EXPOSURE (DAYS)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2)	CHLOR-B PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2)	BIOMASS CHLOROPHYLL RATIO PERIPHYTON (UNITS)
OCT 02...	34	42.1	45.6	33.7	4.50	106
NOV 06...	35	5.43	5.91	2.20	.360	218
MAR 11...	28	176	183	133	.000	67.7
MAY 06...	28	48.3	53.5	39.5	1.59	132

08176500 GUADALUPE RIVER AT VICTORIA, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE TIME	MAR 11,80 1540	MAY 6,80 1435	JUN 11,80 0830	JUL 9,80 1420	AUG 6,80 1045	SEP 10,80 1438
TOTAL CELLS/ML	660	530	510	2300	2800	4100
DIVERSITY: DIVISION	0.8	1.1	1.2	1.3	1.1	0.1
.CLASS	0.8	1.1	1.2	1.3	1.1	0.1
..ORDER	1.5	1.9	1.7	1.7	1.9	0.9
...FAMILY	2.6	2.0	1.9	1.8	2.1	0.9
....GENUS	2.8	2.0	2.1	2.0	2.2	1.5

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...OOCYSTACEAE												
....ANKISTRODESMUS	--	-	--	-	--	-	77	3	52	2	--	-
....SELENASTRUM	--	-	--	-	--	-	13	1	--	-	--	-
...SCENEDESMACEAE												
....SCENEDESMUS	20	3	52	10	--	-	--	-	280	10	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	65	10	90#	17	240#	47	39	2	39	1	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	45	7	300#	56	51	10	810#	35	150	5	--	-
....MELOSIRA	55	8	--	-	--	-	--	-	26	1	--	-
....STEPHANODISCUS	--	-	--	-	64	13	--	-	--	-	--	-
..PENNALES												
...DIATOMACEAE												
....DIATOMA	96	15	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....SYNEDRA	5	1	--	-	--	-	--	-	*	0	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	--	-	*	0	--	-
...NAVICULACEAE												
....GYROSIGMA	--	-	13	2	--	-	--	-	--	-	--	-
....NAVICULA	160#	24	26	5	26	5	130	6	26	1	--	-
...NITZSCHIACEAE												
....NITZSCHIA	170#	26	26	5	100#	20	130	6	77	3	--	-
...SURIRELLACEAE												
....SURIRELLA	5	1	--	-	--	-	--	-	--	-	72	2
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	13	2	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	*	0	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	1000#	44	1500#	54	2300#	56
....ANACYSTIS	--	-	--	-	--	-	100	4	26	1	720#	18
..HORMOGONALES												
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	--	-	570#	20	--	-
....PHORMIDIUM	--	-	--	-	--	-	--	-	--	-	1000#	25
....SCHIZOTHRIX	35	5	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	13	2	26	5	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	--	-	--	-	*	0	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

GUADALUPE RIVER BASIN

08176500 GUADALUPE RIVER AT VICTORIA, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	28638	592	339	26200	41	3170	33	2560	250
NOV.	1979	25796	609	348	24300	43	2980	34	2370	260
DEC.	1979	25447	639	365	25100	45	3120	36	2460	270
JAN.	1980	33295	549	315	28300	38	3410	31	2760	230
FEB.	1980	27005	632	361	26300	45	3260	35	2580	270
MAR.	1980	24670	639	365	24300	45	3020	36	2390	270
APR.	1980	21980	636	364	21600	45	2680	36	2120	270
MAY	1980	82888	374	217	48500	23	5230	21	4630	160
JUNE	1980	33205	541	311	27900	36	3270	30	2700	230
JULY	1980	18705	553	318	16000	37	1890	31	1560	230
AUG.	1980	13661	556	320	11800	38	1390	31	1150	240
SEPT	1980	38018	350	203	20900	22	2210	19	1980	150
TOTAL		373308	**	**	301000	**	35600	**	29300	**
WTD. AVG.		1020	520	299	**	35	**	29	**	220

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C). WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	586	605	606	660	639	643	637	608	483	570	559	569
2	558	611	630	651	681	648	600	593	488	562	566	565
3	525	616	640	643	675	636	620	607	489	628	569	570
4	568	618	643	650	664	629	638	605	515	565	563	567
5	577	619	634	654	627	635	649	583	535	557	559	550
6	575	569	631	666	670	631	660	610	519	553	563	449
7	582	623	642	663	654	639	666	611	564	557	520	551
8	589	621	635	660	658	642	697	594	545	546	541	546
9	581	619	625	681	532	638	655	588	560	545	569	325
10	590	620	637	778	619	636	642	616	550	543	500	200
1	596	625	643	658	542	638	635	615	540	541	518	236
12	573	623	630	650	509	630	641	611	555	539	543	268
13	601	622	642	646	608	636	644	596	572	538	563	273
14	595	624	637	647	619	631	642	610	558	530	560	300
15	600	620	633	641	640	634	641	605	555	524	565	260
16	593	616	646	642	629	625	639	570	589	527	540	311
17	595	623	642	649	644	630	634	593	559	533	556	342
18	601	626	639	642	650	632	638	500	557	534	555	386
19	603	630	652	650	652	640	636	250	551	538	567	427
20	602	632	635	600	662	662	640	295	556	546	586	412
21	603	625	650	228	665	614	615	332	558	550	570	450
22	601	624	662	336	663	644	620	372	556	555	556	468
23	606	623	658	527	658	639	627	255	553	554	555	483
24	602	223	630	604	655	635	629	278	540	562	562	512
25	601	630	635	584	650	632	624	273	548	572	577	533
26	610	637	625	492	652	655	629	300	544	561	569	537
27	607	636	642	461	653	648	627	350	542	564	561	541
28	620	640	660	489	646	656	620	397	533	561	567	520
29	618	642	634	527	644	643	623	420	540	557	579	460
30	612	638	651	589	---	651	615	438	549	560	569	320
31	602	---	644	638	---	647	---	485	---	547	562	---
MEAN	593	609	639	600	637	639	636	489	543	552	558	431

08176500 GUADALUPE RIVER AT VICTORIA, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.0	18.0	11.0	11.0	9.0	15.0	19.0	22.0	27.0	31.0	29.0	28.0
2	25.0	18.0	---	11.0	9.0	11.0	---	22.0	27.0	31.0	29.0	28.0
3	24.0	17.0	12.0	12.0	9.0	12.0	19.0	23.0	27.0	31.0	29.0	28.0
4	25.0	17.0	12.0	11.0	10.0	14.0	20.0	23.0	28.0	30.0	28.0	28.0
5	23.0	18.0	11.0	11.0	11.0	15.0	20.0	23.0	28.0	30.0	29.0	28.0
6	23.0	18.0	12.0	11.0	12.0	15.0	20.0	23.0	28.0	30.0	27.0	26.0
7	23.0	17.0	12.0	---	12.0	16.0	21.0	23.0	29.0	30.0	28.0	27.0
8	24.0	17.0	12.0	12.0	13.0	17.0	20.0	23.0	28.0	30.0	29.0	27.0
9	24.0	19.0	---	12.0	12.0	17.0	20.0	25.0	28.0	---	27.0	27.0
10	23.0	17.0	13.0	12.0	10.0	17.0	20.0	24.0	28.0	30.0	---	25.0
11	22.0	17.0	13.0	13.0	10.0	18.0	21.0	24.0	27.0	30.0	26.0	24.0
12	22.0	16.0	15.0	12.0	10.0	19.0	20.0	24.0	28.0	30.0	26.0	25.0
13	23.0	15.0	11.0	12.0	10.0	17.0	17.0	25.0	28.0	30.0	27.0	26.0
14	23.0	15.0	11.0	13.0	11.0	18.0	16.0	25.0	27.0	30.0	27.0	26.0
15	22.0	14.0	11.0	15.0	12.0	17.0	17.0	23.0	27.0	30.0	28.0	---
16	23.0	14.0	11.0	15.0	13.0	19.0	18.0	23.0	28.0	30.0	28.0	26.0
17	24.0	15.0	10.0	16.0	11.0	---	19.0	23.0	28.0	30.0	28.0	28.0
18	24.0	17.0	9.0	15.0	10.0	16.0	19.0	23.0	29.0	30.0	28.0	28.0
19	24.0	---	9.0	---	12.0	17.0	19.0	---	29.0	30.0	28.0	28.0
20	25.0	17.0	10.0	---	14.0	18.0	---	23.0	29.0	30.0	28.0	27.0
21	25.0	20.0	12.0	15.0	15.0	18.0	20.0	23.0	29.0	---	28.0	27.0
22	25.0	16.0	12.0	15.0	15.0	18.0	21.0	23.0	30.0	30.0	28.0	27.0
23	22.0	14.0	14.0	13.0	16.0	19.0	22.0	23.0	30.0	28.0	29.0	27.0
24	21.0	13.0	---	12.0	17.0	---	22.0	24.0	30.0	28.0	29.0	28.0
25	20.0	14.0	---	13.0	16.0	18.0	22.0	25.0	30.0	28.0	29.0	27.0
26	20.0	13.0	---	13.0	13.0	18.0	22.0	---	30.0	28.0	28.0	27.0
27	20.0	14.0	14.0	12.0	15.0	18.0	22.0	25.0	30.0	29.0	27.0	26.0
28	---	14.0	14.0	12.0	16.0	18.0	21.0	26.0	30.0	29.0	28.0	26.0
29	21.0	12.0	14.0	12.0	17.0	19.0	21.0	26.0	---	29.0	28.0	27.0
30	22.0	11.0	12.0	12.0	---	19.0	22.0	26.0	30.0	29.0	28.0	---
31	21.0	---	11.0	11.0	---	19.0	---	27.0	---	30.0	28.0	---
MEAN	23.0	16.0	12.0	12.5	12.5	17.0	20.0	24.0	28.5	29.5	28.0	27.0

08176900 COLETO CREEK AT ARNOLD ROAD CROSSING NEAR SCHROEDER, TX

LOCATION.--Lat 28°51'41", long 97°13'34", Goliad County, Hydrologic Unit 12100204, on right bank at downstream side of Arnold Road Crossing, 0.7 mi (1.1 km) downstream from confluence of Twelvemile and Fifteenmile Creeks, 3.2 mi (5.1 km) north of Schroeder, 12.8 mi (20.6 km) upstream from Coleto Creek Reservoir, and 26.0 mi (41.8 km) upstream from mouth.

DRAINAGE AREA.--357 mi² (925 km²).

PERIOD OF RECORD.--October 1978 to current year. Records equivalent for January 1930 to December 1933 and October 1952 to September 1979, published as "near Schroeder".

GAGE.--Water-stage recorder. Datum of gage is 100.43 ft (30.611 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. No known diversion above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,600 ft³/s (555 m³/s) May 11, 1979, gage height, 15.54 ft (4.737 m); minimum daily, 3.5 ft³/s (0.099 m³/s) Aug. 5, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharges since at least 1872 at site 3.5 mi (5.6 km) downstream, 122,000 ft³/s (3,460 m³/s) Sept. 21, 1967 (slope-area measurement of peak flow), 63,700 ft³/s (1,800 m³/s) Oct. 16, 1946, and 46,700 ft³/s (1,320 m³/s) in October 1925, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,000 ft³/s (113 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Jan. 20	1900	*19,100	541	15.44	4.706
May 19	1100	6,150	174	11.65	3.551

Minimum daily discharge, 3.5 ft³/s (0.099 m³/s) Aug. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	19	16	24	31	25	20	14	30	9.3	4.8	3.7
2	24	19	17	23	32	25	41	14	29	8.8	4.2	3.7
3	24	18	17	23	33	25	45	13	27	8.3	3.9	3.7
4	23	18	18	22	32	25	28	13	27	7.9	3.7	3.8
5	22	18	18	22	32	25	25	12	25	7.3	3.5	4.1
6	22	18	18	22	31	24	23	12	23	7.1	3.7	8.6
7	22	18	18	22	31	25	23	11	22	6.8	3.9	16
8	21	18	18	22	52	25	21	18	22	6.2	5.9	32
9	21	19	18	22	51	25	20	24	22	5.8	5.4	30
10	19	18	18	22	37	24	20	18	22	5.5	17	23
11	20	18	19	22	35	23	20	16	21	5.0	77	16
12	20	18	22	21	34	23	20	15	20	4.8	36	13
13	20	18	29	21	33	23	21	14	20	4.6	27	11
14	20	18	27	21	31	23	19	14	19	4.4	15	10
15	20	18	24	21	30	23	18	16	18	4.4	13	9.6
16	20	18	23	21	28	23	17	211	17	4.3	13	8.6
17	20	18	21	21	27	23	17	98	16	4.2	15	8.0
18	20	18	21	20	27	23	17	109	16	4.1	14	7.8
19	21	19	21	21	27	22	17	3700	15	4.0	11	7.4
20	22	18	21	3660	26	22	17	559	14	4.8	9.1	6.4
21	22	19	21	1510	26	22	16	127	14	4.5	8.0	5.9
22	22	23	21	258	26	21	16	85	14	4.2	7.4	5.4
23	21	20	22	97	26	20	16	63	14	4.8	6.6	5.2
24	21	18	23	65	25	21	16	55	13	4.7	5.9	4.9
25	21	19	21	53	25	20	16	47	13	4.2	5.4	4.7
26	21	19	21	47	25	22	15	43	12	4.1	5.0	5.0
27	20	18	21	41	24	23	14	38	11	4.2	4.8	14
28	19	17	21	38	24	23	14	36	11	4.6	5.2	20
29	19	16	28	36	24	22	14	33	10	4.8	6.3	14
30	19	16	32	34	---	21	13	31	9.5	5.3	5.6	365
31	21	---	27	32	---	20	---	31	---	5.1	4.5	---
TOTAL	652	549	662	6284	885	711	599	5490	546.5	168.1	350.8	670.5
MEAN	21.0	18.3	21.4	203	30.5	22.9	20.0	177	18.2	5.42	11.3	22.4
MAX	25	23	32	3660	52	25	45	3700	30	9.3	77	365
MIN	19	16	16	20	24	20	13	11	9.5	4.0	3.5	3.7
AC-FT	1290	1090	1310	12460	1760	1410	1190	10890	1080	333	696	1330

CAL YR 1979 TOTAL 57306.0 MEAN 157 MAX 8040 MIN 15 AC-FT 113700
WTR YR 1980 TOTAL 17567.9 MEAN 48.0 MAX 3700 MIN 3.5 AC-FT 34850

08176990 COLETO CREEK RESERVOIR INFLOW (GUADALUPE DIVERSION) NEAR SCHROEDER, TX

LOCATION.--Lat 28°50'21", long 97°11'20", Victoria County, Hydrologic Unit 12100204, on right bank of small tributary 1,200 ft (365 m) upstream from Coleto Creek and 2.6 mi (4.2 km) northeast of Schroeder.

PERIOD OF RECORD.--March to September 1980.

GAGE.--Water-stage recorder. Datum of gage is 100.52 ft (30.638 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Discharge represents flow diverted by pumping from the Guadalupe River to be used as makeup water for the Central Power and Light Co. generating plant on Coleto Creek Reservoir.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 36 ft³/s (1.02 m³/s) Apr. 2, 11, Sept. 11, 1980; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period March to September, 36 ft³/s (1.02 m³/s) Apr. 2, 11, Sept. 11; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, MARCH TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						---	35	31	26	32	33	31
2						---	36	35	26	29	33	33
3						---	35	34	34	31	33	33
4						---	34	34	32	22	33	23
5						---	34	34	34	29	32	17
6						.00	34	33	33	31	33	15
7						.00	34	33	32	31	33	17
8						.00	34	34	18	27	32	28
9						.00	34	33	19	33	31	32
10						.28	33	32	25	24	23	31
11						.44	36	32	34	32	32	36
12						.40	35	31	34	32	32	35
13						.12	33	32	33	32	31	32
14						.41	29	32	33	32	33	33
15						1.4	35	32	33	32	33	32
16						.16	35	28	32	31	32	32
17						8.0	33	26	28	32	32	32
18						19	28	25	32	32	31	32
19						31	16	.43	31	32	32	27
20						28	29	.35	25	22	32	25
21						24	26	14	8.2	33	33	24
22						22	33	34	12	30	34	25
23						25	33	31	33	32	34	28
24						22	33	35	32	33	34	28
25						27	35	34	31	33	33	27
26						35	34	35	33	33	32	25
27						36	34	33	32	32	31	25
28						36	34	34	32	31	31	25
29						36	34	34	28	32	30	27
30						35	34	33	21	33	33	27
31						36	---	34	---	33	32	---
TOTAL						---	982	922.78	856.2	953	993	837
MEAN						---	32.7	29.8	28.5	30.7	32.0	27.9
MAX						---	36	35	34	33	34	36
MIN						---	16	.35	8.2	22	23	15
AC-FT						---	1950	1830	1700	1890	1970	1660

WTR YR 1980 TOTAL - MEAN - MAX - MIN - AC-FT -

08177300 PERDIDO CREEK AT FARM ROAD 622 NEAR FANNIN, TX

LOCATION.--Lat 28°45'05", long 97°19'01", Goliad County, Hydrologic Unit 12100204, at right downstream end of bridge on Farm Road 622, 1.2 mi (1.9 km) downstream from Farmer Creek, 3.1 mi (5.0 km) upstream from Kilgore Creek, and 6.1 mi (9.8 km) northwest of Fannin.

DRAINAGE AREA.--28.0 mi^2 (72.5 km^2).

PERIOD OF RECORD.--June 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 134.66 ft (41.044 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. No known diversion above gage. Several observations of water temperature were made during the year. Guadalupe-Blanco River Authority gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,620 ft^3/s (244 m^3/s) May 11, 1979, gage height, 11.92 ft (3.633 m); minimum daily, 0.04 ft^3/s (0.001 m^3/s) July 7, 8, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 20, 1976, reached a stage of 26.28 ft (8.010 m), and flood of Sept. 15, 16, 1967, reached a stage of 26.08 ft (7.949 m), from information by the State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,790 ft^3/s (50.7 m^3/s) Jan. 20 at 1730 hours, gage height, 8.4 ft (2.56 m), from high-water mark, no other peak above base of 400 ft^3/s (11.3 m^3/s); minimum daily, 0.04 ft^3/s (0.001 m^3/s) July 7, 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.92	.30	.40	.42	.54	.35	.31	.33	.26	.07	.10	.16
2	.92	.30	.40	.48	.88	.33	.38	.30	.25	.05	.10	.17
3	.90	.30	.44	.46	.66	.35	.32	.26	.25	.06	.09	.13
4	.73	.31	.49	.42	.60	.42	.24	.25	.20	.06	.10	.13
5	.70	.36	.44	.44	.60	.37	.27	.25	.22	.05	.16	.14
6	.73	.39	.45	.46	.56	.37	.30	.23	.21	.05	.13	.35
7	.75	.36	.37	.49	.58	.43	.31	.24	.20	.04	.16	.35
8	.65	.38	.36	.49	.88	.44	.25	5.9	.19	.04	.15	.18
9	.64	.37	.36	.49	1.3	.44	.29	.59	.19	.06	.38	.18
10	.54	.32	.40	.51	.66	.46	.27	.40	.19	.06	3.0	.15
11	.61	.32	.40	.54	.54	.47	.35	.39	.18	.07	1.5	.12
12	.65	.34	.69	.44	.66	.48	.32	.36	.18	.07	.15	.11
13	.54	.35	.43	.47	.61	.42	.42	.34	.18	.07	.10	.10
14	.54	.34	.36	.49	.54	.39	.25	.43	.18	.07	.09	.10
15	.53	.36	.36	.50	.53	.47	.26	.67	.16	.06	.11	.11
16	.44	.36	.36	.55	.44	.58	.25	1.1	.15	.06	2.5	.10
17	.44	.43	.32	.56	.41	.61	.29	.22	.15	.06	2.2	.09
18	.44	.44	.34	.54	.49	.35	.26	.35	.14	.06	.28	.08
19	.44	.40	.40	.54	.48	.38	.27	17	.12	.08	.16	.08
20	.44	.40	.44	140	.45	.40	.27	1.4	.12	.11	.15	.08
21	.44	.99	.45	136	.41	.33	.27	.73	.11	.10	.15	.07
22	.41	.50	.54	8.5	.37	.37	.28	.49	.10	.12	.14	.06
23	.25	.40	.82	1.8	.37	.47	.28	.38	.09	.12	.15	.07
24	.25	.47	.48	1.0	.35	.42	.27	.36	.09	.11	.13	.08
25	.31	.56	.38	.86	.31	.38	.26	.36	.08	.10	.13	.08
26	.36	.44	.40	.72	.28	.68	.22	.36	.08	.16	.14	.32
27	.36	.47	.40	.63	.32	.49	.25	.35	.08	.16	.14	.45
28	.36	.42	.60	.62	.38	.42	.26	.32	.07	.27	.14	.19
29	.40	.38	.94	.65	.37	.42	.24	.29	.07	.17	.15	.11
30	.66	.42	.48	.65	---	.28	.30	.29	.07	.11	.16	2.5
31	.38	---	.43	.57	---	.28	---	.28	---	.11	.12	---
TOTAL	16.73	12.18	14.13	301.29	15.57	13.05	8.51	35.22	4.56	2.78	13.16	6.84
MEAN	.54	.41	.46	9.72	.54	.42	.28	1.14	.15	.090	.42	.23
MAX	.92	.99	.94	140	1.3	.68	.42	17	.26	.27	3.0	2.5
MIN	.25	.30	.32	.42	.28	.28	.22	.22	.07	.04	.09	.06
CFSM	.02	.02	.02	.35	.02	.02	.01	.04	.005	.003	.02	.008
IN.	.02	.02	.02	.40	.02	.02	.01	.05	.01	.00	.02	.01
AC-FT	33	24	28	598	31	26	17	70	9.0	5.5	26	14

CAL YR 1979	TOTAL	3381.80	MEAN 9.27	MAX 921	MIN .25	CFSM .33	IN 4.49	AC-FT 6710
WTR YR 1980	TOTAL	444.02	MEAN 1.21	MAX 140	MIN .04	CFSM .04	IN .59	AC-FT 881

08177500 COLETO CREEK NEAR VICTORIA, TX

LOCATION.--Lat 28°43'51", long 97°08'18", Victoria County, Hydrologic Unit 12100204, on left bank at downstream side of westbound bridge on U.S. Highway 59, 1.6 mi (2.6 km) downstream from Coleto Creek dam, 9.0 mi (14.5 km) southwest of Victoria, and 11.2 mi (18.0 km) upstream from mouth.

DRAINAGE AREA.--514 mi² (1,331 km²).

PERIOD OF RECORD.--June 1939 to September 1954, June 1978 to current year.

REVISED RECORDS.--WSP 1562: 1939-40. WSP 1732: 1941.

GAGE.--Water-stage recorder. Datum of gage is 44.18 ft (13.466 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 17, 1955, at same site and at datum 5.0 ft (1.52 m) higher than present datum.

REMARKS.--Records poor. Diversions from Guadalupe River basin to Coleto Creek basin upstream from Coleto Creek Reservoir began Mar. 6, 1980 (see station 08176990). Flow completely regulated since Feb. 21, 1980, by Coleto Reservoir 1.9 mi (3.1 km) upstream. No other large diversion above station. Several observations of water temperature were made during the year. Guadalupe-Blanco River Authority gage-height telemeter at station.

AVERAGE DISCHARGE.--16 years (water years 1940-54, 1979) prior to regulation by Coleto Creek Reservoir, 92.7 ft³/s (2.625 m³/s), 67,160 acre-ft/yr (82.8 hm³/yr).

EXTREMES FOR PERIOD OR RECORD.--Maximum discharge, 89,000 ft³/s (2,520 m³/s) Oct. 16, 1946, gage height, 36.64 ft (11.168 m), present datum, from floodmark, on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1875, 236,000 ft³/s (6,680 m³/s) Sept. 22, 1967, gage height, 42.0 ft (12.80 m), present site and datum, from floodmark, on basis of slope-area measurement of peak flow. Flood of July 1, 1936, reached a stage of 32.2 ft (9.81 m), present site and datum, from information by railroad company.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,550 ft³/s (242 m³/s) Jan. 20 at 2330 hours, gage height, 15.72 ft (4.791 m); minimum daily, 0.84 ft³/s (0.024 m³/s) Mar. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	28	24	39	35	.96	5.5	4.8	3.7	6.1	4.8	4.6
2	34	25	25	36	37	.93	5.7	4.7	3.2	6.7	4.6	4.7
3	33	24	25	36	39	1.0	5.3	4.7	4.7	6.1	4.5	5.1
4	31	23	25	34	37	1.0	4.8	4.6	4.2	5.9	4.5	5.2
5	29	22	26	33	36	.84	4.6	4.7	3.7	5.7	4.5	5.5
6	29	23	27	33	36	.95	5.1	4.6	3.6	6.1	4.5	6.1
7	28	23	27	32	35	1.0	5.1	4.6	4.3	6.2	4.6	6.2
8	27	23	26	31	38	.99	4.9	15	3.8	6.6	4.5	5.9
9	26	24	27	31	70	.92	5.3	6.0	4.1	6.7	6.2	6.6
10	25	23	26	31	50	.90	5.4	5.0	3.4	6.2	21	6.7
11	24	22	27	31	41	.91	4.6	4.6	6.7	5.7	8.6	6.2
12	25	22	44	31	37	.88	4.4	4.3	4.8	5.8	6.5	5.8
13	26	22	36	30	36	12	4.5	4.1	4.6	5.8	6.1	5.7
14	26	22	37	30	35	11	4.5	4.0	4.2	5.5	5.8	6.2
15	26	22	35	30	33	12	4.6	4.3	4.3	5.1	5.7	5.9
16	27	22	33	31	32	11	4.6	8.4	4.2	4.4	6.1	5.8
17	27	24	31	32	29	12	4.9	4.3	4.3	5.7	5.8	5.7
18	26	25	30	32	30	7.9	4.7	5.2	4.3	5.8	5.3	5.8
19	26	25	30	32	34	8.5	4.9	28	3.9	5.8	5.2	5.9
20	26	24	31	1060	30	7.5	4.8	8.4	4.0	5.8	5.1	6.2
21	26	27	31	2450	21	6.9	4.7	6.6	4.2	5.7	4.7	6.2
22	27	33	32	557	4.4	6.7	5.0	5.4	4.3	5.2	4.5	6.0
23	25	32	33	213	2.9	6.6	5.6	4.7	4.2	4.9	4.5	6.3
24	25	28	33	131	2.1	6.1	5.8	3.3	4.3	4.7	4.5	6.3
25	25	26	31	87	1.5	6.0	5.3	3.3	4.8	4.6	4.5	6.1
26	25	27	30	67	1.5	7.1	4.3	3.2	5.6	4.7	4.7	7.2
27	26	27	30	57	1.4	6.8	4.3	3.0	5.8	4.7	4.8	15
28	27	26	58	49	1.3	5.9	4.5	3.0	6.1	8.7	4.8	8.1
29	27	24	153	45	1.2	6.0	4.5	2.9	6.2	7.2	9.1	6.3
30	38	24	48	42	---	5.2	5.1	3.1	6.1	5.6	6.6	62
31	43	---	44	39	---	5.3	---	3.6	---	5.1	5.2	---
TOTAL	871	742	1115	5412	787.3	161.78	147.3	176.4	135.6	178.8	181.8	245.3
MEAN	28.1	24.7	36.0	175	27.1	5.22	4.91	5.69	4.52	5.77	5.86	8.18
MAX	43	33	153	2450	70	12	5.8	28	6.7	8.7	21	62
MIN	24	22	24	30	1.2	.84	4.3	2.9	3.2	4.4	4.5	4.6
CFSM	.06	.05	.07	.34	.05	.01	.01	.01	.009	.01	.01	.02
IN.	.06	.05	.08	.39	.06	.01	.01	.01	.01	.01	.01	.02
AC-FT	1730	1470	2210	10730	1560	321	292	350	269	355	361	487

CAL YR 1979 TOTAL 86051.00 MEAN 236 MAX 8480 MIN 22 CFSM .46 IN 6.23 AC-FT 170700
WTR YR 1980 TOTAL 10154.28 MEAN 27.7 MAX 2450 MIN .84 CFSM .05 IN .73 AC-FT 20140

08177700 OLMOS CREEK AT DRESDEN DRIVE, SAN ANTONIO, TX

LOCATION.--Lat 29°29'56", long 98°30'36", Bexar County, Hydrologic Unit 12100301, on right bank 30 ft (9 m) downstream from low-water bridge on Dresden Drive at San Antonio, 0.15 mi (0.24 km) west of intersection of Blanco Road and Dresden Drive, and 4.0 mi (6.4 km) upstream from Olmos Dam.

DRAINAGE AREA.--21.2 mi² (54.9 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 726.10 ft (221.315 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Recording rain gage located at station, with three additional recording rain gages located in watershed. City of San Antonio rain gage and gage-height telemeters at station.

AVERAGE DISCHARGE.--12 years, 4.38 ft³/s (0.124 m³/s), 2.81 in/yr (71 mm/yr), 3,170 acre-ft/yr (3.91 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,450 ft³/s (211 m³/s) Sept. 13, 1978, gage height, 14.82 ft (4.517 m), from floodmark; no flow at times.

Maximum stage since 1935, that of Sept. 13, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in September and November 1947 reached a stage of 8.5 ft (2.59 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 ft³/s (11.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	(m³/s)	Gage height (ft)	(m)
aDec. 28	1800	*553	15.7	6.23	1.899
Sept. 7	1745	479	13.6	6.01	1.832

a Water-quality samples were obtained during this runoff event.

Minimum discharge, no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.06	.08	.33	.15	.09	.30	10	.02	.08	.00	.26
2	.40	.06	.08	.15	.31	.09	.27	4.9	.02	.10	.01	.00
3	.08	.06	.08	.25	.17	.14	.30	.82	.01	.12	.12	.00
4	.03	.08	.08	.11	.15	.19	.24	.54	.01	.12	.08	.02
5	.03	.19	.08	.11	.15	.21	.23	.52	.00	.15	.06	.02
6	.03	.06	.15	.13	.15	.18	.20	.45	.01	.15	.17	14
7	.04	.06	.15	.10	.15	.22	.22	.50	.01	.16	.06	103
8	.05	.06	.13	.08	.25	.20	.18	11	.00	.20	.10	7.8
9	.04	.06	.14	.10	.16	.14	.22	1.4	.00	.20	1.9	.88
10	.02	.06	.22	.13	.11	.16	.15	.72	.00	.23	58	.54
11	.03	.06	.15	.11	.11	.09	.17	.79	.02	.23	15	.31
12	.05	.06	.66	.13	.11	.10	.66	.71	.02	.20	.19	.32
13	.05	.06	4.8	.16	.11	.14	1.1	19	.02	.19	.17	.30
14	.08	.06	.40	.15	.15	.13	.25	46	.02	.18	.15	.34
15	.08	.06	.33	.15	.11	.09	.25	61	.02	.14	.13	.34
16	.08	.05	.22	.15	3.3	.11	.25	21	.03	.17	.22	.34
17	.06	.05	.20	.42	.09	.13	.24	14	.04	.15	.06	.38
18	.06	.83	.25	.22	.08	.16	.23	8.6	.03	.15	.04	.28
19	.06	.08	.25	.20	.08	.23	.25	22	.03	.18	.05	28
20	.06	.08	.25	.41	.08	.40	.29	.31	.04	.15	.03	1.3
21	.06	.83	.25	.18	.08	.11	.25	20	.44	.15	.09	.49
22	.06	.09	.25	1.6	.08	.11	.28	.62	.07	31	.02	.44
23	.06	.08	.95	.28	.09	.15	.31	.12	.04	2.1	.05	.38
24	.06	.51	.27	.24	.08	.17	.31	1.1	.04	.30	.03	.32
25	.06	.54	.25	.23	.10	.15	15	.07	.06	.15	.03	.33
26	.06	.20	.25	.20	.11	.30	.82	.06	.06	.15	.02	1.6
27	.23	.15	.25	.16	.12	3.9	.43	.06	.06	.11	.02	11
28	.20	.11	86	.15	.11	1.5	.38	.05	.06	.11	.02	1.8
29	.08	.08	12	.15	.12	.26	.41	.04	.04	.10	.03	.48
30	.08	.08	.31	.15	---	.21	.39	.03	.05	.04	.00	3.1
31	.08	---	.25	.15	---	.20	---	.03	---	.02	.10	---
TOTAL	2.44	4.81	109.73	7.08	6.86	10.26	24.58	246.44	1.27	37.48	76.95	178.37
MEAN	.079	.16	3.54	.23	.24	.33	.82	7.95	.042	1.21	2.48	5.95
MAX	.40	.83	86	1.6	3.3	3.9	15	61	.44	31	58	103
MIN	.02	.05	.08	.08	.08	.09	.15	.03	.00	.02	.00	.00
CFSM	.004	.008	.17	.01	.01	.02	.04	.38	.002	.06	.12	.28
IN.	.00	.01	.19	.01	.01	.02	.04	.43	.00	.07	.14	.31
AC-FT	4.8	9.5	218	14	14	20	49	489	2.5	74	153	354
(††)	.06	.61	2.68	.48	.79	1.12	1.85	7.58	.16	.74	2.78	6.29

CAL YR 1979 TOTAL 1470.67 MEAN 4.03 MAX 243 MIN .00 CFSM .19 IN 2.58 AC-FT 2920 †† 29.40
WTR YR 1980 TOTAL 706.27 MEAN 1.93 MAX 103 MIN .00 CFSM .09 IN 1.24 AC-FT 1400 †† 25

†† Weighted-mean rainfall, in inches.

08177700 OLMOS CREEK AT DRESDEN DRIVE, SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: November 1968 to current year. Sediment analyses: October 1972 to September 1973. Water temperatures: November 1968 to current year. Bacteria analyses: April 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
DEC										
28...	1608	37	290	7.9	16.0	5	160	9.0	92	8.5
28...	1812	507	99	8.4	14.5	80	1100	9.6	95	6.7
28...	2020	236	111	8.5	13.5	100	500	9.7	94	7.6
31...	1108	.25	572	7.2	9.5	10	4.3	10.1	89	1.7

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
DEC									
28...	110000	50000	56000	160	25	56	3.9	17	.6
28...	K140000	K24000	112000	40	4	14	1.2	3.1	.2
28...	K72000	K17000	72000	42	0	16	.4	3.8	.3
31...	8000	K3400	4800	230	43	84	5.4	27	.8

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)
DEC									
28...	3.4	160	0	30	14	.2	9.3	213	230
28...	3.4	42	1	6.6	3.4	.1	3.0	57	1610
28...	3.7	52	<1	7.9	4.3	.1	3.9	66	628
31...	4.0	230	0	60	30	.3	15	339	6

DATE	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
DEC									
28...	39	.24	.020	.26	.110	1.9	2.0	.250	21
28...	198	.39	.140	.53	.400	2.1	2.5	1.100	52
28...	84	.40	.120	.52	.430	1.4	1.8	.760	22
31...	4	.60	.030	.63	.020	.72	.74	.060	7.8

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
DEC							
28...	1608	1	50	<1	0	0	320
28...	1812	1	20	<1	0	0	40
28...	2020	1	10	<1	0	0	30

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
DEC						
28...	24	40	.0	0	0	20
28...	4	3	.0	0	0	<3
28...	4	4	.1	0	0	20

08177700 OLMOS CREEK AT DRESDEN DRIVE, SAN ANTONIO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	PCB TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
DEC									
28...	1608	.00	.00	.00	.0	.00	.00	.00	.04
28...	1812	.00	.00	.00	.1	.00	.00	.01	.36

DATE	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)
DEC									
28...	.00	.00	.00	.00	.01	.00	.00	.00	.00
28...	.00	.00	.00	.00	.02	.00	.00	.01	.00

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
DEC									
28...	.00	.00	.00	.00	0	.00	.01	.01	.01
28...	.01	.00	.00	.00	0	.00	.01	.01	.00

08177800 OLMOS RESERVOIR AT SAN ANTONIO, TX

LOCATION.--Lat 29°28'28", long 98°28'23", Bexar County, Hydrologic Unit 12100301, at left upstream side of dam on Olmos Drive, 0.8 mi (1.3 km) upstream from Hildebrand Street, 1.5 mi (2.4 km) upstream from Brackenridge Park Zoo, and 4.0 mi (6.4 km) downstream from gaging station 08177700.

DRAINAGE AREA.--32.4 mi² (83.9 km²).

PERIOD OF RECORD.--June 1968 to September 1971, April 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS (revised).--The dam is a concrete gravity-type structure with a maximum height of 50 ft (15 m) and a total length of 1,941 ft (592 m), spillway crest length 1,051 ft (320 m). The dam, spillway section, and gate house were rebuilt in 1980. The outlet structure consists of six vertical slide-gate-controlled concrete conduits with entrance dimensions of 5.75 ft (1.75 m) wide by 7.83 ft (2.39 m) high. The gates are maintained and operated by the city of San Antonio Fire Department as required to control downstream floodflow. The reservoir is empty except during flooding when it is used as a detention reservoir. The reservoir has a surface area of about 950 acres (384 hm²) at top of the dam. The dam is owned by the city of San Antonio. National Weather Service rain gage and gage-height telemeters at station. Figures given herein represent elevations at 2400 hours. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Design flood (probably maximum flood)................................	736.4	24,150
Floor of gate operating room................................	736.0	23,560
Top of dam (crest of spillway)................................	728.0	14,240
Lowest gated outlet (invert)................................	680.0	0

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 704.50 ft (214.732 m) Sept. 13, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 691.96 ft (210.909 m) Dec. 28.

ELEVATION, IN FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	682.03	682.16	682.49	682.65	682.17	682.74	682.68	684.00	682.53	683.30	684.00	683.44
2	682.23	681.98	682.04	682.45	682.90	682.66	682.48	682.90	682.42	683.45	683.57	683.16
3	681.97	681.90	682.47	682.51	682.53	682.82	682.36	682.40	682.41	683.58	683.21	682.98
4	681.94	681.96	682.05	682.41	682.45	682.92	682.23	682.20	682.30	683.51	682.85	683.24
5	681.90	682.02	682.01	682.33	682.55	683.03	682.23	682.10	682.30	683.46	682.49	683.31
6	681.91	682.12	682.01	682.41	682.60	683.10	682.19	682.00	682.22	683.64	682.13	687.05
7	682.09	682.17	682.03	682.30	682.59	683.07	682.32	682.00	682.39	683.46	681.85	689.39
8	681.97	682.04	682.06	682.30	684.85	683.06	682.23	685.31	682.35	683.50	681.41	684.49
9	681.93	682.00	681.99	682.31	682.86	683.05	682.04	682.93	682.42	683.47	681.13	684.41
10	681.97	681.93	682.11	682.69	682.54	682.94	682.33	682.28	682.32	683.47	686.89	684.27
11	681.95	681.91	682.08	682.43	682.46	682.91	682.40	682.29	682.14	683.39	685.06	684.21
12	682.06	681.94	684.39	682.34	682.31	682.84	684.06	682.67	681.85	683.26	684.41	684.19
13	681.98	682.17	685.20	682.32	682.31	682.75	682.82	687.00	681.80	683.21	684.08	684.17
14	681.91	681.91	682.38	682.38	682.54	682.65	682.41	685.91	681.71	683.15	683.84	684.17
15	682.03	682.03	682.26	682.50	682.45	682.78	682.16	685.52	681.49	683.17	683.32	684.23
16	682.09	681.97	682.06	682.43	682.78	682.95	682.09	686.54	681.18	683.53	683.48	682.99
17	682.10	684.43	681.99	682.97	682.43	682.72	682.07	684.96	680.86	683.39	683.35	682.90
18	682.10	682.19	681.98	682.56	682.42	682.57	682.14	687.06	680.63	683.15	683.30	682.86
19	681.94	682.01	681.98	682.46	682.29	682.61	682.11	684.89	680.45	683.21	683.24	684.24
20	681.92	682.03	682.04	683.06	682.27	682.74	682.01	683.31	680.34	683.26	683.25	682.66
21	681.84	683.50	682.02	682.54	682.22	682.82	682.02	684.99	683.42	683.30	683.24	682.60
22	681.83	682.07	682.04	683.29	682.25	682.75	682.01	683.28	682.55	685.58	683.21	682.61
23	681.92	681.98	685.06	682.55	682.19	683.23	682.07	683.00	682.06	684.82	683.22	682.58
24	682.08	685.54	682.40	682.42	682.12	682.89	682.03	683.33	681.61	684.28	683.25	682.50
25	682.03	682.35	682.14	682.36	682.30	682.98	684.50	682.90	681.21	683.95	683.59	682.62
26	682.07	682.08	681.99	682.34	682.13	682.82	682.80	682.83	681.73	684.29	683.33	683.19
27	682.12	682.03	682.03	682.39	682.20	685.55	682.35	683.19	683.03	684.40	683.36	683.67
28	681.96	682.13	691.82	682.43	682.54	682.64	682.10	683.32	683.13	685.23	683.04	682.63
29	682.01	682.18	684.38	682.35	682.82	682.37	682.00	683.19	683.30	684.83	683.05	682.56
30	682.20	682.10	682.79	682.37	---	682.26	682.00	682.65	683.32	684.66	683.02	682.65
31	682.06	---	682.54	682.29	---	682.55	---	682.47	---	684.40	685.20	---
MAX	682.23	685.54	691.82	683.29	684.85	685.55	684.50	687.06	683.42	685.58	686.89	689.39
MIN	681.83	681.90	681.98	682.29	682.12	682.26	682.00	682.00	680.34	683.15	681.13	682.50

CAL YR 1979 MAX 696.14 MIN 681.29
WTR YR 1980 MAX 691.82 MIN 680.34

08178000 SAN ANTONIO RIVER AT SAN ANTONIO, TX

LOCATION.--Lat 29°24'34", long 98°29'41", Bexar County, Hydrologic Unit 12100301, on left bank 193 ft (59 m) downstream from South Alamo Street Bridge in San Antonio, 2.1 mi (3.4 km) upstream from San Pedro Creek, and 230.6 mi (371.1 km) upstream from mouth.

DRAINAGE AREA.--41.8 mi² (108.3 km²). Flow of river comes from intermittent spring flow and from artesian wells; drainage area of streams not applicable.

PERIOD OF RECORD.--December 1895 to June 1906 periodic discharge measurements only, January 1915 to November 1929, February 1939 to current year. Ground-water discharge into river is discussed by Petit and George, Texas Board of Water Engineers Bull. 5608, vol. 1 (1956, p. 45).

Water-quality records: Chemical, biochemical, and pesticide analyses: November 1968 to September 1979. Sediment analyses: May 1970 to September 1973. Water temperatures: November 1968 to September 1979. Bacteria analyses: May 1976 to September 1979.

REVISED RECORDS.--WSP 1312: 1917. WSP 1923: Drainage area. WRD TX-72-1: 1971(m).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 605.26 ft (184.483 m) National Geodetic Vertical Datum of 1929. Jan. 26, 1915, to Feb. 27, 1916, nonrecording gage at site 1.3 mi (2.1 km) upstream at different datum. Feb. 28, 1916, to Apr. 7, 1920, nonrecording gage at site 1.1 mi (1.8 km) upstream at different datum. Apr. 8, 1920, to Nov. 16, 1929, and Feb. 15, 1939, to Apr. 25, 1967, water-stage recorder in vicinity of South Alamo Street Bridge at 7.00-foot (2.134 m) higher datum. Apr. 25, 1967, to May 13, 1969, water-stage recorder at site 307 ft (94 m) downstream at same datum.

REMARKS.--Records good. Floodflow is regulated by Olmos flood-control reservoir, capacity 14,240 acre-ft (17.6 hm³), revised, about 8.5 mi (13.7 km) upstream. Dam completed in 1926 and rebuilt in 1980. Springs emerge intermittently from the Edwards and associated limestones along the Balcones Fault Zone. City of San Antonio rain gage and gage-height telemeters at station.

AVERAGE DISCHARGE.--55 years, 55.8 ft³/s (1.580 m³/s), 18.13 in/yr (461 mm/yr), 40,430 acre-ft/yr (49.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,300 ft³/s (433 m³/s) Sept. 10, 1921, gage height, 20.14 ft (6.139 m), from floodmark, at former site and datum, from rating curve extended above 2,000 ft³/s (56.6 m³/s) on basis of slope-area measurement of peak flow; no flow at times due to regulation.

Maximum stage since 1819, that of Sept. 10, 1921.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 5, 1819, equaled or exceeded that of Sept. 10, 1921.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,440 ft³/s (69.1 m³/s) May 1 at 1845 hours, gage height, 11.23 ft (3.423 m); minimum daily, 0.86 ft³/s (0.024 m³/s) May 5, due to regulation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	33	57	63	54	27	18	148	23	13	15	15
2	56	44	60	68	57	27	21	40	20	12	15	22
3	51	47	70	68	57	29	22	26	16	12	14	16
4	48	48	58	68	55	29	20	8.8	17	10	16	16
5	47	46	57	68	52	28	21	.86	13	11	16	16
6	46	46	46	68	51	25	19	23	14	11	15	148
7	44	48	56	67	51	24	21	10	12	12	28	416
8	44	51	58	66	60	23	16	55	11	11	26	142
9	44	49	58	66	56	21	16	17	22	13	26	15
10	58	47	59	66	50	23	20	16	13	11	240	7.1
11	45	48	60	66	50	20	24	14	7.1	13	99	12
12	45	48	77	62	51	21	18	31	3.4	12	14	13
13	44	50	128	63	49	18	27	82	10	12	18	12
14	43	48	56	63	49	19	18	191	11	11	18	12
15	46	47	57	62	49	20	17	241	9.8	12	18	13
16	46	44	57	62	78	20	16	88	11	13	19	14
17	44	80	45	61	41	22	16	80	9.3	13	17	11
18	43	60	54	61	43	19	11	67	11	16	17	13
19	42	43	57	60	42	19	3.7	168	9.7	13	16	21
20	41	55	58	79	55	20	12	31	10	11	16	15
21	63	75	58	64	27	18	11	198	11	14	19	9.5
22	32	57	58	84	36	18	15	44	9.4	21	17	12
23	38	56	70	62	35	18	13	28	12	32	15	12
24	44	87	65	57	35	17	12	34	11	16	14	12
25	44	55	60	57	30	17	89	36	11	13	29	15
26	42	50	62	58	29	24	13	36	11	14	7.4	15
27	43	59	60	56	29	75	14	41	11	12	7.7	29
28	43	60	184	56	28	28	13	25	10	14	15	14
29	43	60	196	56	30	21	14	33	9.8	14	15	12
30	49	60	71	56	---	18	13	29	14	14	16	26
31	47	---	55	55	---	7.0	---	27	---	15	20	---
TOTAL	1419	1601	2167	1968	1329	715.0	563.7	1868.66	363.5	423	838.1	1105.6
MEAN	45.8	53.4	69.9	63.5	45.8	23.1	18.8	60.3	12.1	13.6	27.0	36.9
MAX	63	87	196	84	78	75	89	241	23	32	240	416
MIN	32	33	45	55	27	7.0	3.7	.86	3.4	10	7.4	7.1
AC-FT	2810	3180	4300	3900	2640	1420	1120	3710	721	839	1660	2190

CAL YR 1979 TOTAL 39455.00 MEAN 108 MAX 1060 MIN 29 AC-FT 78260
WTR YR 1980 TOTAL 14361.56 MEAN 39.2 MAX 416 MIN .86 AC-FT 28490

[illegible] CREEK AT [illegible], SAN ANTONIO, TX

(Flood-hydrograph partial-record station)

LOCATION.--Lat [illegible], long [illegible], Bexar County, Hydrologic Unit [illegible], on right bank [illegible] from mouth.

DRAINAGE AREA.--[illegible]

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January to September 1980.

GAGE.--Digital recorders (stage and rainfall), concrete control, and crest-stage gages. Gage is not referenced to National Geodetic Vertical Datum of 1929.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, [illegible]

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period January to September, [illegible]

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

[illegible]

08178620 LORENCE CREEK AT THOUSAND OAKS BOULEVARD, SAN ANTONIO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)
MAY											
13...	[illegible]	1	0	1	[illegible]	1	<1	0	0	0	3
13...	[illegible]	--	--	1	[illegible]	--	<1	--	--	0	--
13...	[illegible]	--	--	1	[illegible]	--	<1	--	--	0	--

DATE	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
MAY											
13...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13...	--	[illegible]	--	--	[illegible]	--	--	[illegible]	--	--	[illegible]
13...	--	[illegible]	--	--	[illegible]	--	--	[illegible]	--	--	[illegible]

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
MAY										
13...	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13...	--	--	[illegible]	--	--	[illegible]	[illegible]	--	--	[illegible]
13...	--	--	[illegible]	--	--	[illegible]	[illegible]	--	--	[illegible]

DATE	TIME	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
MAY									
13...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
MAY									
13...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
MAY									
13...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

08178640 WEST ELM CREEK AT SAN ANTONIO, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°37'23", long 98°26'29", Bexar County, Hydrologic Unit 12100301, at mid-channel, 1.8 mi (2.9 km) upstream from mouth of East Elm Creek, 2.1 mi (3.4 km) upstream from Farm Road 1604, and 7.0 mi (11.3 km) north of San Antonio International Airport.

DRAINAGE AREA.--2.45 mi² (6.35 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1976 to current year.

GAGE.--Digital recorders (stage and rainfall) and crest-stage gages. Gage is not referenced to National Geodetic Vertical Datum 1929.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 335 ft³/s (9.49 m³/s) Sept. 28 1976, gage height, 4.30 ft (1.311 m); maximum gage height, 4.48 ft (1.366 m) May 15, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 327 ft³/s (9.26 m³/s) May 15 at 1107 hours, gage height, 4.48 ft (1.366 m), no other peak discharges above base of 100 ft³/s (2.83 m³/s); water-quality samples were made on this date; no flow most of time.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, pesticide, and bacteria analyses: May 1976 to current year. Water temperatures: May 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL 5 DAY (MG/L)
MAY										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAY									
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAY										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAY									
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

08178640 WEST ELM CREEK AT SAN ANTONIO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUSPENDED TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)
MAY											
15...	1010	--	--	1	5	--	--	<1	--	--	0
15...	1030	6	5	1	0	1	0	1	20	20	0
15...	1145	--	--	1	8	--	--	<1	--	--	0
15...	1230	--	--	1	9	--	--	<1	--	--	0

DATE	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN)
MAY											
15...	--	--	4	--	--	160	--	--	2	--	--
15...	19	17	2	19000	19000	290	30	30	0	700	690
15...	--	--	4	--	--	100	--	--	0	--	--
15...	--	--	4	--	--	50	--	--	0	--	--

DATE	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
MAY											
15...	4	--	--	.0	--	--	0	0	--	--	<3
15...	10	.6	.6	.0	1	0	0	0	80	70	10
15...	3	--	--	.1	--	--	0	0	--	--	<3
15...	2	--	--	.1	--	--	0	0	--	--	3

DATE	TIME	PCB TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)
MAY									
15...	1010	.00	.00	.00	.0	.00	.00	.01	.00
15...	1030	.00	.00	.00	.0	.00	.00	.01	.00

DATE	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)
MAY									
15...	.00	.00	.00	.00	.00	.00	.00	.00	.00
15...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
MAY									
15...	.00	.00	.00	.00	0	.00	.00	.00	.00
15...	.00	.00	.00	.00	0	.00	.00	.00	.00

08178645 EAST ELM CREEK AT SAN ANTONIO, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°37'04", long 98°25'41", Bexar County, Hydrologic Unit 12100301, at mid-channel, 2.1 mi (3.4 km) upstream from West Elm Creek, 2.4 mi (3.9 km) upstream from Farm Road 1604, and 6.9 mi (11.1 km) north of San Antonio International Airport.

DRAINAGE AREA.--2.33 mi² (6.03 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1975 to current year.

GAGE.--Digital recorders (stage and rainfall) and crest-stage gages. Gage is not referenced to National Geodetic Vertical Datum of 1929.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 310 ft³/s (8.78 m³/s) May 7, 1976, gage height, 6.78 ft (2.067 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 106 ft³/s (3.00 m³/s) May 5 at 1150, gage height, 4.93 ft (1.503 m), no other peak discharge above base of 100 ft³/s (2.83 m³/s); water-quality samples were made on this date; no flow most of time.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, pesticide, and bacteria analyses: May 1976 to current year. Water temperatures: May 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
MAY										
05...	1139	66	76	8.0	20.5	100	54	8.0	91	5.1
05...	1151	103	73	7.9	20.5	80	48	9.1	103	4.3
05...	1225	72	82	7.8	20.5	80	29	9.0	102	3.6
05...	1357	32	102	8.0	20.5	80	14	8.2	93	2.8
05...	1707	16	108	7.9	20.5	100	21	8.3	94	3.0

DATE	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
MAY									
05...	70000	660000	60000	27	0	10	.6	.3	.0
05...	61000	56000	33000	33	0	12	.8	.6	.0
05...	830000	28000	28000	35	0	13	.6	.7	.1
05...	830000	21000	27000	44	0	17	.9	.8	.1
05...	320000	74000	11000	49	0	18	.9	.8	.1

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)
MAY									
05...	[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
05...	[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
05...	[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
05...	[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
05...	[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DATE	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
MAY									
05...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
05...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
05...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
05...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
05...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

08178645 EAST ELM CREEK AT SAN ANTONIO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)
MAY										
15...	1139	--	0	4	--	<1	--	--	0	--
15...	1151	ND	0	5	0	<1	10	10	0	1
15...	1225	--	0	5	--	<1	--	--	0	--

DATE	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN)
MAY										
15...	--	1	--	--	60	--	--	1	--	--
15...	0	14	2000	2000	50	7	6	1	60	60
15...	--	3	--	--	50	--	--	2	--	--

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
MAY										
15...	2	--	--	.1	--	--	0	0	--	<3
15...	2	.6	.5	.1	0	0	0	0	20	<3
15...	2	--	--	.1	--	--	0	0	--	9

DATE	TIME	PCB TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
MAY									
15...	1139	.00	.00	.00	.0	.00	.00	.00	.00
15...	1151	.00	.00	.00	.0	.00	.00	.00	.00

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
MAY									
15...	.00	.00	.00	.00	.00	.00	.00	.00	.00
15...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
MAY									
15...	.00	.00	.00	.00	0	.00	.00	.00	.00
15...	.00	.00	.00	.00	0	.00	.00	.00	.00

08178700 SALADO CREEK (UPPER STATION) AT SAN ANTONIO, TX

LOCATION.--Lat 29°30'57", long 98°25'51", Bexar County, Hydrologic Unit 12100301, on upstream side of upstream bridge of two bridges on Interstate Highway 410 in San Antonio, 1.0 mi (1.6 km) west of Northeast School, 1.1 mi (1.8 km) upstream from Perrin-Beitel Creek, and 2.7 mi (4.3 km) east of San Antonio International Airport.

DRAINAGE AREA.--137 mi² (355 km²).

PERIOD OF RECORD.--September 1960 to current year.

GAGE.--Water-stage recorder with concrete control. Datum of gage is 684.60 ft (208.666 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. No known diversion above station. Recording rain gage located at station with four additional recording rain gages located in watershed. Flow is affected at times by discharge from flood-detention pools of nine floodwater-retarding structures with combined detention capacity of 24,460 acre-ft (30.2 hm³). These structures control runoff from 67.7 mi² (175.3 km²) above this station.

AVERAGE DISCHARGE.--20 years, 9.94 ft³/s (0.282 m³/s), 0.98 in/yr (25 mm/yr), 7,200 acre-ft/yr (8.88 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,900 ft³/s (705 m³/s) May 12, 1972, gage height, 15.22 ft (4.639 m), from rating curve extended above 8,000 ft³/s (227 m³/s) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1853, 23 to 24 ft (7.0 to 7.3 m) in October 1913. Flood in September 1921 reached a stage of 18 ft (5.5 m), and flood of Sept. 27, 1946, reached a stage of 18.2 ft (5.55 m), and are the highest since 1899.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 232 ft³/s (6.57 m³/s) Sept. 6, time unknown, gage height, 4.36 ft (1.329 m), from floodmark, no peak above base of 250 ft³/s (7.08 m³/s); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	.40	.10	3.1	1.6	.20	4.8	30	.70	.30	.20	.20
2	1.1	.40	.10	3.0	1.5	.20	2.4	5.0	.60	.20	.20	.20
3	2.0	.30	.10	2.9	1.4	.20	2.2	3.7	.60	.10	.20	.10
4	4.7	.30	.10	2.9	1.4	.20	2.1	3.5	.50	.10	.20	.10
5	2.8	.30	.10	2.8	1.3	.20	2.0	3.4	.50	.10	.20	.10
6	.43	.20	.10	2.8	1.2	.20	2.0	3.3	.40	.00	2.6	50
7	.40	.20	.10	2.7	1.1	.20	1.9	3.2	.40	.00	1.0	15
8	.41	.20	.10	2.7	1.0	.20	1.8	3.2	.40	.00	.60	5.0
9	.36	.20	.10	2.6	.90	.20	1.8	3.1	.40	.00	3.0	2.6
10	.15	.20	.10	2.6	.90	.20	1.8	3.0	.40	.00	20	2.0
11	1.2	.20	.10	2.5	.80	.20	3.0	3.0	.30	.00	10	1.2
12	.50	.20	14	2.4	.80	.20	5.0	3.2	.30	.00	5.0	.80
13	.40	.20	8.0	2.4	.70	.20	3.5	100	.30	.00	2.5	.40
14	.40	.10	5.0	2.4	.70	.20	2.5	90	.30	.00	1.6	.30
15	1.2	.10	3.9	2.3	.60	.20	2.0	65	.30	.00	.60	.20
16	.60	.10	3.7	2.3	.50	7.0	1.7	55	.20	.00	.40	.10
17	.50	4.0	3.6	2.2	.40	3.2	1.6	50	.30	.00	.30	.10
18	.40	10	3.5	2.2	.40	3.0	1.5	160	.20	.00	.20	.00
19	.40	2.3	3.4	2.2	.40	2.8	1.4	60	.10	.00	.10	.00
20	.40	6.0	3.4	2.1	.30	2.7	1.3	30	.10	.00	.00	.00
21	.40	12	3.3	2.1	.30	2.6	1.3	50	10	.00	.00	.00
22	.30	8.0	3.3	4.0	.30	2.5	1.2	9.0	2.5	30	.00	.00
23	.30	2.0	3.4	2.7	.30	2.5	1.2	5.0	2.0	24	.00	.00
24	.20	5.0	3.3	2.1	.30	2.4	1.2	3.2	1.6	16	.00	.00
25	.20	3.3	3.1	2.0	.20	2.4	20	2.5	1.2	10	.00	.00
26	.20	1.4	3.0	2.0	.20	2.3	8.0	2.2	1.0	80	2.0	2.0
27	.20	.60	3.0	1.9	.20	3.4	4.5	2.0	.80	60	.80	7.0
28	.20	.20	30	1.8	.20	3.6	4.0	1.4	.80	50	.50	4.0
29	.60	.10	8.0	1.8	.20	2.6	3.9	1.2	.50	40	.40	2.7
30	1.0	.10	3.5	1.7	---	2.2	3.7	1.0	.60	30	.30	6.0
31	.60	---	3.2	1.6	---	2.1	---	.80	---	20	.20	---
TOTAL	23.63	58.60	116.70	76.0	30.10	52.10	95.3	705.90	27.70	1150	53.10	100.10
MEAN	.76	1.95	3.76	2.45	1.04	1.68	3.18	22.8	.92	37	1.71	3.34
MAX	4.7	12	30	4.0	1.6	7.0	20	160	10	80	20	50
MIN	.15	.10	.10	1.6	.20	.20	1.2	.80	.10	.00	.00	.00
CFSM	.006	.01	.03	.02	.008	.01	.02	.17	.007	.27	.01	.02
IN.	.01	.02	.03	.02	.01	.01	.03	.19	.01	.31	.01	.03
AC-FT	47	116	231	151	60	103	189	1400	55	2280	105	199
(††)	.02	1.89	1.08	.66	.77	1.97	1.27	6.38	1.12	.18	2.31	6.44

CAL YR 1979 TOTAL 4377.16 MEAN 12.0 MAX 1210 MIN .00 CFSM .09 IN 1.19 AC-FT 8680 †† 29.76
WTR YR 1980 TOTAL 1330.25 MEAN 3.63 MAX 160 MIN .00 CFSM .03 IN .36 AC-FT 2640 †† 24.50

†† Weighted-mean rainfall, in inches.

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX

LOCATION.--Lat 29°21'25", long 98°24'45", Bexar County, Hydrologic Unit 12100301, on right bank at upstream side of bridge on Loop 13 at San Antonio, 1.4 mi (2.3 km) east of Brooks Air Force Base, and 3.3 mi (5.3 km) upstream from Rosillo Creek.

DRAINAGE AREA.--189 mi² (490 km²).

PERIOD OF RECORD.--September 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 526.95 ft (160.614 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Small diversions above station. Recording rain gage located at station with six additional recording rain gages located in watershed. Most of low flow comes from artesian wells and springs in city of San Antonio. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08178700.

AVERAGE DISCHARGE.--20 years, 42.7 ft³/s (1.209 m³/s), 3.07 in/yr (78 mm/yr), 30,940 acre-ft/yr (38.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,100 ft³/s (371 m³/s) Sept. 27, 1973, gage height, 28.83 ft (8.787 m); no flow Aug. 13, 1967.
Maximum stage since at least 1941, that of Sept. 27, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of Sept. 27, 1946, and Aug. 15, 1960, were about equal magnitude. Flood of Aug. 15, 1960, reached a stage of 26.8 ft (8.17 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 ft³/s (17.0 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 15	2200	617	17.5	11.55	3.520
May 19	0100	664	18.8	11.78	3.591
Sept. 7	1900	*807	22.9	12.39	3.776

Minimum discharge, 5.0 ft³/s (0.14 m³/s) Aug. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	30	42	28	31	28	24	48	23	9.6	9.4	11
2	19	30	45	32	33	26	31	141	24	8.5	11	11
3	19	32	45	32	33	26	29	42	26	8.3	11	12
4	20	33	40	33	30	27	26	29	24	7.9	11	12
5	27	31	38	32	30	27	25	24	25	13	12	11
6	27	30	38	34	29	28	26	23	25	13	9.5	26
7	24	37	38	38	29	27	25	22	22	12	10	475
8	27	37	42	38	30	28	24	52	21	13	9.2	268
9	25	37	43	38	36	29	22	65	22	13	10	46
10	24	41	43	39	35	30	22	32	23	12	101	33
11	24	41	43	39	32	28	22	25	22	13	182	24
12	22	38	48	37	30	26	25	24	21	13	25	20
13	23	38	62	37	29	23	36	49	20	13	11	19
14	25	37	56	39	31	25	35	254	18	13	10	18
15	24	38	43	39	30	26	30	358	17	12	9.2	17
16	23	38	38	39	50	27	24	207	20	13	8.7	16
17	22	44	41	39	39	29	22	157	18	10	9.4	16
18	20	59	42	38	30	27	22	78	16	11	9.2	15
19	21	35	46	39	28	27	23	431	16	8.2	8.4	15
20	24	32	47	46	27	27	24	65	14	7.9	7.9	15
21	27	71	67	39	28	26	23	225	14	11	7.7	15
22	27	32	67	94	29	25	22	77	37	13	7.2	15
23	25	37	53	49	30	26	21	38	20	18	6.3	15
24	25	39	60	32	29	27	20	30	14	12	6.5	14
25	25	57	49	29	27	25	80	29	12	9.8	6.2	15
26	27	46	68	28	25	30	49	27	10	9.3	11	20
27	28	40	66	28	25	51	26	25	12	12	9.1	24
28	30	37	97	28	26	76	20	26	11	11	9.5	26
29	31	38	216	29	28	32	19	26	11	11	9.5	20
30	32	60	61	30	---	26	18	26	9.9	10	10	23
31	31	---	38	30	---	24	---	24	---	9.3	10	---
TOTAL	768	1193	1570	1152	889	909	813	2679	567.9	350.8	567.9	1267
MEAN	24.8	39.8	50.6	37.2	30.7	29.3	27.1	86.4	18.9	11.3	18.3	42.2
MAX	32	71	216	94	50	76	80	431	37	18	182	475
MIN	19	30	38	28	25	23	18	22	9.9	7.9	6.2	11
CFSM	.13	.21	.27	.20	.16	.16	.14	.46	.10	.06	.10	.22
IN.	.15	.23	.31	.23	.17	.18	.16	.53	.11	.07	.11	.25
AC-FT	1520	2370	3110	2280	1760	1800	1610	5310	1130	696	1130	2510
(††)	.84	1.53	1.96	.70	.80	1.64	1.39	6.76	1.01	.08	2.62	6.17

CAL YR 1979 TOTAL 22720.0 MEAN 62.2 MAX 1800 MIN 19 CFSM .33 IN 4.47 AC-FT 45070 †† 37.58
WTR YR 1980 TOTAL 12726.6 MEAN 34.8 MAX 475 MIN 6.2 CFSM .18 IN 2.50 AC-FT 25240 †† 24.72

†† Weighted-mean rainfall, in inches, based on seven rain gages.

08179000 MEDINA RIVER NEAR PIPE CREEK, TX

LOCATION.--Lat 29°40'31", long 98°58'33", Bandera County, Hydrologic Unit 12100302, on right bank 500 ft (150 m) upstream from Bandera Falls, 0.6 mi (1.0 km) upstream from Red Bluff Creek, and 4.1 mi (6.6 km) southwest of Pipe Creek.

DRAINAGE AREA.--474 mi² (1,228 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1922 to June 1935, October 1952 to current year. Monthly discharge only for some periods published in WSP 1312 and 1732.

REVISED RECORDS.--WSP 1312: 1925(M). WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,067.37 ft (325.334 m) Corps of Engineers datum. December 1922 to June 1935, water-stage recorder at site 1.9 mi (3.1 km) upstream at different datum.

REMARKS.--Water-discharge records good. Small diversion above station.

AVERAGE DISCHARGE.--40 years (water years 1923-34, 1953-80), 140 ft³/s (3.965 m³/s), 4.01 in/yr (102 mm/yr), 101,400 acre-ft/yr (125 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 281,000 ft³/s (7,960 m³/s) Aug. 2, 1978, gage height, 49.6 ft (15.12 m), from floodmark, from rating curve extended above 32,000 ft³/s (906 m³/s) on basis of slope-area measurements of 64,000 and 281,000 ft³/s (1,810 and 7,960 m³/s); minimum, 0.2 ft³/s (0.006 m³/s) July 14-16, 1956.

Maximum stage since at least 1880, that of Aug. 2, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1919 reached a stage of about 43 ft (13.1 m), present site and datum, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,600 ft³/s (45.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 19	0230	2,860	81.0	7.17	2.185
Sept. 8-9	unknown	a*15,000	425	unknown	-
Sept. 29	1400	10,600	300	13.34	4.066

a Estimated.

Minimum daily discharge, 14 ft³/s (0.40 m³/s) Aug. 6, 8, 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	53	53	63	54	41	60	46	39	25	16	19
2	60	53	52	62	54	41	60	53	39	23	16	19
3	60	53	53	59	54	43	59	51	37	23	15	19
4	59	51	51	59	51	45	56	49	37	22	15	19
5	57	51	52	58	51	44	55	48	36	21	15	19
6	56	51	52	57	50	43	55	46	36	21	14	19
7	57	51	51	56	50	44	54	43	38	20	15	900
8	57	51	51	54	50	45	51	49	41	20	14	6600
9	57	51	51	53	50	46	50	50	39	20	14	850
10	55	51	51	53	49	45	49	46	38	20	16	361
11	55	51	53	54	49	44	49	46	38	20	19	248
12	55	51	59	54	49	44	49	44	37	20	21	192
13	56	51	66	52	49	44	49	43	37	19	23	154
14	56	51	62	51	49	44	50	51	35	19	23	131
15	56	51	63	51	48	43	51	55	34	18	22	115
16	56	51	62	52	47	45	50	57	33	18	22	102
17	56	54	59	55	47	43	49	68	32	18	23	96
18	56	79	58	55	47	41	48	74	31	18	23	91
19	55	69	57	55	48	41	47	572	31	17	23	87
20	55	59	57	56	48	42	46	82	30	17	25	83
21	54	63	57	58	46	43	45	68	29	17	27	80
22	52	62	57	67	44	42	44	61	28	17	28	76
23	50	60	57	67	43	43	44	57	28	17	29	71
24	51	59	55	64	42	43	44	53	27	18	26	67
25	51	59	55	62	42	42	49	51	26	18	25	64
26	53	59	55	60	41	42	48	49	26	17	24	67
27	54	58	55	58	42	99	48	47	25	17	24	116
28	54	56	57	56	42	98	49	46	25	17	22	124
29	53	53	63	56	43	80	47	42	25	17	22	2380
30	54	53	65	55	---	73	46	40	25	17	21	936
31	53	---	65	55	---	88	---	38	---	17	20	---
TOTAL	1714	1665	1754	1767	1379	1539	1501	2125	982	588	642	14103
MEAN	55.3	55.5	56.6	57.0	47.6	49.6	50.0	68.5	32.7	19.0	20.7	470
MAX	61	79	66	67	54	99	60	572	41	25	29	6600
MIN	50	51	51	51	41	41	44	38	25	17	14	19
CFSM	.12	.12	.12	.12	.10	.11	.11	.13	.07	.04	.04	.99
IN.	.13	.13	.14	.14	.11	.12	.12	.17	.08	.05	.05	1.11
AC-FT	3400	3300	3480	3500	2740	3050	2980	4210	1950	1170	1270	27970

CAL YR 1979	TOTAL 98106	MEAN 270	MAX 2710	MIN 50	CFSM .57	IN 7.74	AC-FT 194600
WTR YR 1980	TOTAL 29759	MEAN 81.3	MAX 6600	MIN 14	CFSM .17	IN 2.34	AC-FT 59030

NOTE.--No gage-height record Sept. 7-9.

08179000 MEDINA RIVER NEAR PIPE CREEK, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
JAN 07...	1322	56	530	8.1	12.0	5	.20	11.2	107	1.8
MAY 15...	1104	54	519	7.6	22.0	0	5.6	7.9	95	1.8
JUL 29...	1320	14	550	8.1	29.5	0	2.0	9.8	132	1.1

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
JAN 07...	>16	K16	K8	270	77	75	19	8.3	.2
MAY 15...	600	220	110	250	74	69	20	8.8	.2
JUL 29...	>41	41	40	250	73	67	21	11	.3

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)
JAN 07...	1.3	230	0	76	13	.3	8.6	315	7
MAY 15...	1.5	220	0	79	15	.3	12	314	23
JUL 29...	2.1	220	0	78	16	.4	15	319	1

DATE	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
JAN 07...	6	.46	.020	.48	.010	.35	.36	.010	3.0
MAY 15...	6	.40	.010	.41	.040	.38	.42	.010	1.7
JUL 29...	3	.67	.020	.69	.060	1.5	1.6	.010	5.3

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
JAN 07...	1322	0	30	<1	0	0	<10
JUL 29...	1320	1	40	<1	0	2	<10

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN 07...	3	2	.1	0	0	6
JUL 29...	0	6	.1	0	0	<3

08179000 MEDINA RIVER NEAR PIPE CREEK, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	PCB TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JAN									
07...	1322	.00	.0	.00	.0	.00	.00	.00	.03
JUL									
29...	1320	.00	.0	.00	.0	.00	.00	.00	.00

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JAN									
07...	.00	.00	.00	.00	.00	.00	.00	.00	.00
JUL									
29...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN									
07...	.00	.00	.00	.00	0	.00	.00	.00	.00
JUL									
29...	.00	.00	.00	.00	0	.00	.00	.00	.00

08179100 RED BLUFF CREEK NEAR PIPE CREEK, TX

LOCATION.--Lat 29°40'51", long 98°57'19", Bandera County, Hydrologic Unit 12100302, on left bank 0.8 mi (1.3 km) upstream from bridge on Farm Road 1283, 1.8 mi (2.9 km) downstream from Pipe Creek, 1.9 mi (3.1 km) upstream from mouth, and 3.2 mi (5.1 km) south of Pipe Creek.

DRAINAGE AREA.--56.3 mi² (145.8 km²).

PERIOD OF RECORD.--April 1956 to current year.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,107.2 ft (337.475 m) Corps of Engineers datum.

REMARKS.--Records good. Small dams on upstream tributaries affect flow during time of storm runoff. No known diversion. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--24 years (water years 1957-80), 11.8 ft³/s (0.334 m³/s), 2.85 in/yr (72 mm/yr), 8,550 acre-ft/yr (10.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 46,900 ft³/s (1,330 m³/s) Sept. 27, 1964, gage height, 22.64 ft (6.901 m), from rating curve extended above 2,000 ft³/s (56.6 m³/s) on basis of slope-area measurement of peak flow; no flow for many days each year.
Maximum stage since at least 1905, that of Sept. 27, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of about 17 ft (5.2 m) was reached in July 1937. Flood in October 1953 reached a stage of 13.8 ft (4.21 m).

EXTREMES FOR CURRENT YEAR.--No flow for year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
CFSM	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN.	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

CAL YR 1979 TOTAL 5494.21 MEAN 15.1 MAX 336 MIN .00 CFSM .27 IN 3.63 AC-FT 10900
WTR YR 1980 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 CFSM .000 IN .00 AC-FT 0

08179500 MEDINA LAKE NEAR SAN ANTONIO, TX

LOCATION.--Lat 29°32'24", long 98°56'01", Medina County, Hydrologic Unit 12100302, at gate-operating platform, 576 ft (176 m) from left end of Medina Dam on Medina River, 4.2 mi (6.8 km) upstream from Medina diversion dam, 13 mi (21 km) north of Castroville, 28 mi (45 km) west of San Antonio, and 70.4 mi (113.3 km) upstream from mouth. Water-quality sampling site at the center of low-water bridge 0.6 mi (1.0 km) downstream.

DRAINAGE AREA.--634 mi² (1,642 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1913 to current year. Prior to October 1965, monthend contents only.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Nonrecording gage read once daily if stage changing materially, otherwise intermittently. Datum of gage is 7.80 ft (2.377 m) below National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by a gravity-type concrete dam, 1,580 ft (482 m) long. The dam was completed and storage began May 7, 1913. The uncontrolled emergency spillway is a cut through natural rock 880 ft (268 m) long, with a 3-foot-wide (1 m) cutoff wall, located near right end of dam. The dam and lake are owned by the Bexar-Medina-Atascosa Counties Water Improvement District No. 1, which has a permit from the Texas Department of Water Resources to irrigate 150,000 acres (60,700 hm²) annually. An undetermined amount of water from the lake enters the Edwards and associated limestones in the Balcones Fault Zone, part of which is above and part below the dam. Water is released downstream to Medina Diversion Reservoir where it is diverted into Medina Canal by the Water District. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Top of dam	1,084.0	-
Crest of spillway	1,072.0	254,000
Water-supply outlet pipes (invert)	966.5	4,780
Lowest gated outlet (invert)	920.0	0

COOPERATION.--Capacity table, based on survey made prior to June 1912, and gage-height record were furnished by the Bexar-Medina-Atascosa Counties Water Improvement District No. 1.

EXTREMES (at 0800) FOR PERIOD OF RECORD.--Maximum contents observed, 288,800 acre-ft (365 hm³) Sept. 16, 1919, gage height, 1,078.0 ft (328.57 m); minimum observed since lake first filled, 780 acre-ft (0.962 hm³) about Apr. 11, 1948, gage height, 944.0 ft (287.73 m).

EXTREMES (at 0800) FOR CURRENT YEAR.--Maximum contents, 247,600 acre-ft (305 hm³) Oct. 1, gage height, 1,070.9 ft (326.41 m); minimum, 167,200 acre-ft (206 hm³) Sept. 6, gage height, 1,054.1 ft (321.29 m).

Capacity table (gage height, in feet, and total contents, in acre-feet)

1,054.0	166,800	1,065.0	217,200
1,055.0	171,000	1,070.0	242,400
1,060.0	192,000	1,071.0	248,200

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	247600	238400	233400	230800	227800	223800	215700	207500	207200	192000	177300	168900
2	247100	238400	233400	230300	227300	223300	215700	207400	207100	191200	176900	168500
3	247100	237900	232800	230300	227300	223300	215600	207200	207100	190700	176400	168000
4	246500	237900	232800	230300	227300	223300	215400	207100	206600	189900	176000	167600
5	245900	237400	232800	230300	227300	222800	215200	206600	206100	189500	175600	167600
6	245900	237400	232300	230300	227300	222800	214700	206100	205600	189100	174800	167200
7	245900	236900	232300	230300	226800	222300	214700	206100	205100	188200	174300	169300
8	245300	236900	232300	230300	226800	222300	214600	205800	204600	187800	173900	182700
9	245300	236400	232300	230300	226800	222300	214400	205600	204100	187400	173800	183600
10	244700	236400	232300	230300	226800	221800	214200	205600	203600	187000	173600	184600
11	244700	235900	231800	229800	226300	221800	213700	205100	203100	187000	173500	184900
12	244200	235900	231800	229800	226300	221200	213500	205100	202600	186100	173500	185300
13	243600	235400	231300	229300	226300	220700	213200	205600	202100	185700	173100	185700
14	243000	235400	231300	229300	225800	220700	213000	205600	201600	185300	173100	185700
15	243000	234900	231300	229300	225800	220200	212700	205600	201100	184900	173100	185700
16	242400	234900	231300	229300	225300	219700	212200	206100	200600	184400	172700	185300
17	241900	234400	231300	229300	225300	219200	212000	206600	200100	183600	172700	185300
18	241900	235400	231300	228800	225300	219200	211700	207100	199600	183200	172700	185300
19	241600	234900	230800	228800	225300	218700	211200	207100	199100	182700	172700	185300
20	241600	234900	230800	228800	225300	218700	211200	207100	198600	181900	172200	185300
21	240900	234900	230800	228800	225300	218200	210700	208100	[illegible]	181900	171600	185300
22	240900	234400	230800	228800	224800	217700	210200	208100	[illegible]	181100	171600	184900
23	240400	234400	230800	228300	224800	217700	209700	208100	[illegible]	180600	171600	184900
24	240400	234400	230800	228300	224800	217200	209100	208100	[illegible]	180200	171000	184900
25	240400	234400	230800	228300	224800	217200	209000	208100	[illegible]	179800	171000	184900
26	239900	233900	230800	228300	224800	216700	208800	208100	[illegible]	[illegible]	[illegible]	[illegible]
27	239400	233900	230800	227800	224300	216700	208600	208100	[illegible]	[illegible]	[illegible]	[illegible]
28	239400	233900	230800	227800	224300	216700	208100	207600	[illegible]	[illegible]	[illegible]	[illegible]
29	239400	233400	230800	227800	223800	[illegible]	208100	207600	[illegible]	[illegible]	[illegible]	[illegible]
30	238900	233400	230800	227800	---	[illegible]	207600	207600	[illegible]	[illegible]	[illegible]	[illegible]
31	238900	---	230800	227800	---	214200	---	207600	---	[illegible]	[illegible]	---
MAX	247600	238400	233400	230800	227800	223800	215700	208100	207200	192000	177300	[illegible]
MIN	238900	233400	230800	227800	223800	214200	207600	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
‡	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
§	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]

CAL YR 1979 MAX [illegible] MIN [illegible]
WTR YR 1980 MAX 247600 MIN [illegible]

‡ Elevation, in feet, at end of month.
§ Change in contents, in acre-feet.

08179500 MEDINA LAKE NEAR SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	TEMPER-ATURE, WATER (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
JAN 11...	1105	420	15.0	190	45	54	14	7.2	.2

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
JAN 11...	1.7	180	0	42	15	.2	9.9	233

08180000 MEDINA CANAL NEAR RIOMEDINA, TX

LOCATION.--Lat 29°30'19", long 98°54'11", Medina County, Hydrologic Unit 12100302, in center of canal, 54 ft (16 m) upstream from center pier of double-barrel flume, 350 ft (107 m) downstream from county highway bridge, 1,900 ft (579 m) downstream from head of canal and diversion dam, 4.6 mi (7.4 km) downstream from Medina Dam, 4.7 mi (7.6 km) north of Riomedina, and 25 mi (40 km) northwest of San Antonio.

PERIOD OF RECORD.--March 1922 to May 1934, July 1957 to current year.

REVISED RECORDS.--WSP 568: 1922. WSP 1712: 1922(M), 1924, 1926.

GAGE.--Water-stage recorder. Altitude of gage is 910 ft (277 m), from topographic map.

REMARKS.--Records good. Station is above all diversions from canal. Canal diverts from right end of Medina Diversion Dam 1,900 ft (579 m) upstream from gage for irrigation downstream near Lacoste and Natalia. Several observations of water temperatures were made during the year.

AVERAGE DISCHARGE.--34 years (water years 1923-33, 1958-80), 41.0 ft³/s (1.161 m³/s), 29,700 acre-ft/yr (36.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 216 ft³/s (6.12 m³/s) May 6, 1971; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	83	57	19	6.1	41	47	54	111	70	167	125	70
2	83	74	19	6.1	24	38	46	111	97	166	137	35
3	84	78	27	6.1	39	43	82	111	96	166	137	43
4	85	76	38	9.5	47	54	73	101	169	166	137	70
5	86	64	33	24	43	55	63	96	161	164	137	63
6	87	58	22	24	26	81	62	96	175	164	137	57
7	87	58	27	24	27	88	73	91	170	166	130	28
8	87	58	32	24	27	72	98	47	166	166	91	.00
9	88	58	32	24	20	68	91	4.7	158	166	73	.00
10	87	57	32	24	16	74	86	27	159	166	38	.00
11	87	57	31	24	45	85	98	26	162	167	.00	.00
12	86	57	21	9.7	23	94	98	19	171	167	.00	5.5
13	87	49	5.6	4.9	22	111	69	7.3	165	166	.00	18
14	85	36	.00	40	37	117	92	.00	161	167	.00	17
15	75	50	.00	50	37	114	96	.00	158	166	2.5	35
16	63	64	.00	36	28	115	98	.01	159	164	9.0	50
17	51	48	.00	28	18	89	110	.00	162	156	13	62
18	62	49	.00	25	18	99	115	.02	171	121	21	58
19	82	49	.00	12	31	112	116	.00	170	175	24	47
20	89	31	.00	12	34	118	115	.00	169	171	35	37
21	88	22	.00	12	42	120	113	.00	169	169	36	37
22	79	22	.00	1.3	40	111	114	.00	168	163	25	46
23	69	35	.00	.00	33	116	118	.00	168	142	21	54
24	70	33	9.6	39	28	120	116	.00	167	112	21	54
25	72	33	21	56	37	115	112	.00	167	110	32	59
26	72	27	34	31	46	95	102	5.1	167	125	54	54
27	73	19	25	33	37	71	103	7.6	167	122	54	20
28	73	19	16	32	43	69	104	.00	167	117	55	21
29	73	19	11	32	50	75	109	22	167	111	67	38
30	58	19	6.4	31	---	74	112	44	167	112	68	54
31	48	---	6.1	43	---	65	---	55	---	112	71	---
TOTAL	2399	1376	467.70	723.70	959	2705	2838	981.73	4743	4672	1750.50	1132.50
MEAN	77.4	45.9	15.1	23.3	33.1	87.3	94.6	31.7	158	151	56.5	37.8
MAX	89	78	38	56	50	120	118	111	175	175	137	70
MIN	48	19	.00	.00	16	38	46	.00	70	110	.00	.00
AC-FT	4760	2730	928	1440	1900	5370	5630	1950	9410	9270	3470	2250

CAL YR 1979 TOTAL 14960.59 MEAN 41.0 MAX 190 MIN .00 AC-FT 29670
WTR YR 1980 TOTAL 24748.13 MEAN 67.6 MAX 175 MIN .00 AC-FT 49090

08180800 MEDINA RIVER NEAR SOMERSET, TX

LOCATION.--Lat 29°15'45", long 98°34'56", Bexar County, Hydrologic Unit 12100302, on left bank 300 ft (91 m) upstream from bridge on State Highway 16, 2.1 mi (3.4 km) upstream from Elm Creek, 4.9 mi (7.9 km) downstream from Medio Creek, 5.2 mi (8.4 km) northeast of Somerset, and 14.1 mi (22.7 km) upstream from mouth.

DRAINAGE AREA.--967 mi^2 (2,505 km^2), of which 634 mi^2 (1,642 km^2) is above dam forming Medina Lake.

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder. Datum of gage is 493.56 ft (150.437 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow is regulated by Medina Lake (station 08179500) 56 mi (90 km) upstream and by Medina Diversion Lake, capacity 4,500 acre-ft (5.55 hm^3). For diversion of canal records, see Medina Canal near Riomedina (station 08180000). A large part of the streamflow is lost into the Edwards and associated limestones in the Balcones Fault Zone, which crosses the basin between the upstream end of Medina Lake and about 5 mi (8 km) downstream from Medina Dam, or 0.9 mi (1.4 km) downstream from the diversion dam. There are several small diversions below Medina Diversion Dam. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--10 years, 272 ft^3/s (7.703 m^3/s), 197,100 acre-ft/yr (243 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,500 ft^3/s (864 m^3/s) July 17, 1973, gage height, 29.39 ft (8.958 m); minimum, 21 ft^3/s (0.59 m^3/s) July 23, 24, 1971.
Maximum stage since about 1890, that of July 17, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,430 ft^3/s (40.5 m^3/s) Aug. 11 at 1300 hours, gage height, 12.76 ft (3.889 m); minimum, 34 ft^3/s (0.96 m^3/s) Aug. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68	72	70	82	78	67	69	59	76	44	38	57
2	67	73	69	81	78	65	70	59	73	44	38	56
3	66	73	74	78	79	66	74	62	71	44	38	54
4	64	73	71	79	79	68	72	62	69	42	39	54
5	64	73	70	79	79	67	70	61	69	42	36	53
6	65	74	73	80	78	66	72	58	69	42	35	55
7	65	73	74	81	78	68	74	56	68	45	36	65
8	63	73	75	80	78	68	67	96	66	44	38	86
9	63	73	71	80	77	70	60	125	66	41	38	81
10	63	73	73	81	77	75	61	82	62	41	143	74
11	61	72	71	82	77	72	62	69	62	42	1040	70
12	61	72	72	79	77	67	62	66	59	42	307	65
13	62	72	76	78	78	67	62	81	58	42	135	64
14	64	69	78	79	79	65	64	103	58	44	100	62
15	66	68	76	80	80	63	60	174	56	44	86	60
16	65	68	73	81	81	68	58	236	58	43	80	60
17	65	69	73	80	80	71	58	137	55	41	77	59
18	65	74	72	78	80	65	60	126	54	39	75	60
19	64	78	71	78	80	64	60	146	54	39	72	57
20	63	76	72	78	80	67	61	144	53	36	70	57
21	67	74	72	79	79	69	62	120	52	37	67	56
22	68	72	76	82	78	67	60	120	52	42	66	54
23	68	70	78	81	78	67	58	95	54	42	64	52
24	68	71	80	81	78	68	58	85	52	43	62	51
25	68	77	79	80	77	61	61	91	50	41	61	51
26	70	79	78	80	72	66	64	97	49	39	60	52
27	72	77	78	79	71	78	63	93	49	39	58	61
28	72	73	81	79	71	78	61	90	47	40	57	59
29	73	70	101	77	67	75	60	84	47	40	55	59
30	74	69	100	78	---	71	59	83	48	40	56	59
31	73	---	86	79	---	72	---	82	---	40	57	---
TOTAL	2057	2180	2363	2469	2244	2121	1902	3042	1756	1284	3184	1803
MEAN	66.4	72.7	76.2	79.6	77.4	68.4	63.4	98.1	58.5	41.4	103	60.1
MAX	74	79	101	82	81	78	74	236	76	45	1040	86
MIN	61	68	69	77	67	61	58	56	47	36	35	51
AC-FT	4080	4320	4690	4900	4450	4210	3770	6030	3480	2550	6320	3580

CAL YR 1979 TOTAL 133351 MEAN 365 MAX 2500 MIN 61 AC-FT 264500
WTR YR 1980 TOTAL 26405 MEAN 72.1 MAX 1040 MIN 35 AC-FT 52370

08181400 HELOTES CREEK AT HELOTES, TX

LOCATION.--Lat 29°34'42", long 98°41'29", Bexar County, Hydrologic Unit 12100302, 42 ft (13 m) left of and 44 ft (13 m) downstream from centerline of bridge on State Highway 16, 0.1 mi (0.2 km) northwest of Helotes, and 8.6 mi (13.8 km) upstream from mouth.

DRAINAGE AREA.--15.0 mi^2 (38.8 km^2).

PERIOD OF RECORD.--June 1968 to current year.

REVISED RECORDS.--WRD TX-73-1: 1972(M).

GAGE.--Water-stage recorder. Datum of gage is 1,014.82 ft (309.317 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. An undetermined amount of flow is diverted for domestic use above the station, and some flow enters the Edwards and associated limestones through the Balcones Fault Zone in the vicinity of the gage. Recording rain gage located at station, with two additional recording rain gages located in watershed.

AVERAGE DISCHARGE.--12 years, 4.44 ft^3/s (0.126 m^3/s), 4.02 in/yr (102 mm/yr), 3,220 acre-ft/yr (3.97 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,680 ft^3/s (217 m^3/s) July 16, 1973, gage height, 10.8 ft (3.29 m), from floodmarks, from rating curve extended above 5,000 ft^3/s (142 m^3/s); no flow most of time.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1923, 13.7 ft (4.18 m) in 1927, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18 ft^3/s (0.51 m^3/s) Nov. 17 at 2300 hours, gage height, 1.91 ft (0.582 m), no peak above base of 140 ft^3/s (3.96 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.27	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.45
8	.00	.00	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.18	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.39	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00	.00
15	.00	.00	.00	.00	.06	.00	.00	.13	.00	.00	.00	.00
16	.00	.00	.00	.00	.04	.00	.00	.08	.00	.00	.00	.00
17	.00	.34	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.03	.00	.00	.00	.00	.00	.11	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.04	.00	.00	.00	.00	.00	.22	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.18	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.18	.00	.00	.00	.00	.00	.12
28	.00	.00	.29	.00	.00	.00	.00	.00	.00	.00	.00	.20
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.41	.29	.00	.10	.18	.18	1.53	.00	.00	.18	.80
MEAN	.000	.014	.009	.000	.003	.006	.006	.049	.000	.000	.006	.027
MAX	.00	.34	.29	.00	.06	.18	.18	.39	.00	.00	.18	.45
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
CFSM	.000	.001	.001	.000	.000	.000	.000	.003	.000	.000	.000	.002
IN.	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.8	.6	.00	.2	.4	.4	3.0	.00	.00	.4	1.6
(††)	.00	3.59	1.89	.87	.94	1.55	1.71	6.45	.21	.07	2.69	8.29

CAL YR 1979 TOTAL 2537.68 MEAN 6.95 MAX 219 MIN .00 CFSM .46 IN 6.29 AC-FT 5030 †† 36.13
WTR YR 1980 TOTAL 3.67 MEAN .010 MAX .45 MIN .00 CFSM .001 IN .01 AC-FT 7.3 †† 28.26

†† Weighted-mean rainfall, in inches.

08181500 MEDINA RIVER AT SAN ANTONIO, TX

LOCATION.--Lat 29°15'14", long 98°28'20", Bexar County, Hydrologic Unit 12100302, near left bank on downstream side of pier of upstream bridge of two bridges on U.S. Highway 281 in San Antonio and 6.8 mi (10.9 km) upstream from mouth.

DRAINAGE AREA.--1,317 mi^2 (3,411 km^2), of which 634 mi^2 (1,642 km^2) is above dam forming Medina Lake.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1929 to December 1930, July 1939 to current year. October 1929 to December 1930 records below about 50 ft^3/s (1.42 m^3/s) in connection with seepage investigation (published as "at Losoya"). Published as "near San Antonio" July 1939 to September 1970.

REVISED RECORDS.--WSP 1562: 1957. WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 439.0 ft (133.81 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). October 1929 to December 1930, nonrecording gage at Losoya 1.5 mi (2.4 km) downstream at different datum.

REMARKS.--Water-discharge records good. Flow is slightly regulated by Medina Lake (station 08179500), 60 mi (97 km) upstream, and diversion dam reservoir, capacity 4,500 acre-ft (5.55 hm^3). For diversion of canal records, see Medina Canal near Riomedina (station 08180000). For statement concerning losses into the Edwards and associated limestones formation, see Medina River near Somerset (station 08180800). Several small diversions below diversion dam reservoir. Records furnished by the city of San Antonio indicate that during the current year sewage effluent in the amounts of 676 acre-ft (0.834 hm^3) from Mitchell Lake plant and 22,150 acre-ft (27.3 hm^3) from Leon Creek plant was discharged into the Medina River above this station. The city of San Antonio Sanitation Department operates a temperature and gage-height telemeter at this station.

AVERAGE DISCHARGE.--41 years (water years 1930-31, 1939-80), 167 ft^3/s (4.729 m^3/s), 121,000 acre-ft/yr (149 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,900 ft^3/s (903 m^3/s) July 17, 1973, gage height, 43.59 ft (13.286 m); minimum daily, 3.3 ft^3/s (0.093 m^3/s) Apr. 18, Nov. 1, 1956, and Jan. 24, 1957.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 55 ft (16.8 m) sometime prior to construction of Medina Dam in 1913, from information by State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,980 ft^3/s (56.1 m^3/s) Aug. 11 at 0900 hours, gage height, 15.84 ft (4.828 m); minimum daily, 22 ft^3/s (0.62 m^3/s) July 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	94	105	124	126	124	58	120	46	135	59	85	40
2	93	107	127	123	125	55	130	123	143	45	88	38
3	93	103	131	123	134	53	133	120	125	48	87	40
4	91	102	131	122	128	58	125	116	100	45	93	44
5	93	107	129	122	124	58	119	114	95	40	93	40
6	98	119	129	122	127	56	127	113	92	42	93	51
7	99	117	135	123	128	74	131	105	129	48	96	158
8	96	112	135	122	123	105	123	217	126	45	102	213
9	97	112	126	124	123	106	105	292	110	39	104	166
10	103	113	125	127	119	121	87	172	75	34	386	141
11	101	112	126	129	119	117	82	134	75	32	1820	131
12	99	108	131	124	123	108	92	122	67	33	665	121
13	99	108	147	126	123	106	103	130	63	31	265	117
14	99	106	144	133	119	104	99	385	66	31	194	112
15	104	101	135	134	128	99	94	366	64	32	171	112
16	94	101	126	133	136	104	74	498	72	33	146	110
17	81	101	126	129	137	117	69	285	68	28	137	108
18	88	113	120	135	143	112	67	238	64	26	131	109
19	81	109	120	130	137	112	66	404	61	25	126	108
20	70	106	120	130	130	110	66	290	60	22	122	108
21	73	113	120	131	131	109	71	304	60	22	117	106
22	81	113	124	141	128	83	65	296	60	27	115	105
23	91	113	124	135	124	70	44	229	87	35	110	100
24	92	113	130	127	121	79	36	180	127	36	107	96
25	93	123	126	125	120	65	69	179	119	30	106	100
26	91	122	124	122	119	72	74	188	117	27	101	109
27	89	123	122	120	89	133	55	183	116	26	99	135
28	89	125	128	128	68	161	48	181	113	31	83	152
29	93	118	187	126	60	129	43	171	107	84	48	120
30	105	112	170	129	---	118	44	164	108	85	45	118
31	112	---	139	126	---	119	---	154	---	83	43	---
TOTAL	2882	3337	4081	3947	3510	2971	2561	6499	2804	1224	5978	3208
MEAN	93.0	111	132	127	121	95.8	85.4	210	93.5	39.5	193	107
MAX	112	125	187	141	143	161	133	498	143	85	1820	213
MIN	70	101	120	120	60	53	36	46	60	22	43	38
AC-FT	5720	6620	8090	7830	6960	5890	5080	12890	5560	2430	11860	6360

CAL YR 1979 TOTAL 163178 MEAN 447 MAX 2580 MIN 70 AC-FT 323700
WTR YR 1980 TOTAL 43002 MEAN 117 MAX 1820 MIN 22 AC-FT 85290

08181500 MEDINA RIVER AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1970 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)
OCT 04...	1210	260	890	7.8	23.0	15	7.4	4.4	51	8.6	330	87
NOV 09...	1350	330	827	7.7	20.5	5	6.5	5.7	64	10	300	64
DEC 13...	1010	440	833	8.0	15.0	10	5.0	6.6	65	14	310	66
JAN 18...	1455	400	816	7.8	17.0	15	14	5.8	60	13	310	77
FEB 15...	1315	360	833	7.8	17.5	5	9.5	6.0	63	8.1	310	73
MAR 13...	1430	320	866	7.8	20.5	5	22	6.4	71	5.1	330	100
APR 10...	1455	275	873	7.7	20.5	5	13	5.2	58	9.1	310	75
MAY 09...	1120	315	590	7.7	21.5	30	310	6.4	73	8.7	200	80
JUN 12...	1044	115	818	8.1	30.0	5	50	6.8	89	4.7	310	78
JUL 30...	1315	65	854	--	28.0	10	18	6.1	78	7.1	290	44
AUG 28...	1252	185	850	7.7	27.5	5	27	4.6	59	16	300	62
SEP 12...	1258	110	780	7.9	27.0	5	50	5.8	73	5.8	270	52

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
OCT 04...	97	22	55	1.3	4.8	300	0	90	76	.3	13	506
NOV 09...	88	20	49	1.2	3.5	290	0	85	66	.3	12	467
DEC 13...	92	20	50	1.2	3.8	300	0	84	71	.3	13	482
JAN 18...	88	21	52	1.3	3.8	280	0	91	66	.4	10	470
FEB 15...	90	21	52	1.3	4.2	290	0	100	75	.1	11	496
MAR 13...	95	23	64	1.5	4.1	280	0	110	76	.3	12	522
APR 10...	89	22	53	1.3	3.6	290	0	91	73	.3	13	488
MAY 09...	60	13	35	1.1	7.5	150	0	83	56	.3	9.9	339
JUN 12...	87	22	47	1.2	3.4	280	0	98	69	.3	13	478
JUL 30...	83	20	62	1.6	5.2	300	0	83	79	.5	14	495
AUG 28...	89	20	54	1.3	4.9	290	0	90	76	.3	15	492
SEP 12...	80	18	46	1.2	4.3	270	0	80	63	.4	14	439

08181500 MEDINA RIVER AT SAN ANTONIO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	PHENOLS (UG/L)
OCT 04...	36	15	2.6	.600	3.2	2.500	.60	3.1	2.500	4.8	2
NOV 09...	24	17	3.4	.400	3.8	1.600	.60	2.2	.400	15	--
DEC 13...	15	5	1.3	.340	1.6	1.600	2.6	4.2	.100	12	3
JAN 18...	32	7	1.1	.510	1.6	.900	1.9	2.8	1.300	6.2	0
FEB 15...	22	4	1.5	.610	2.1	1.100	1.4	2.5	1.800	5.9	2
MAR 13...	30	14	3.4	.670	4.1	.430	.47	.90	1.200	4.4	0
APR 10...	26	11	2.9	.540	3.4	2.200	.80	3.0	.590	6.4	2
MAY 09...	618	32	1.2	.140	1.3	.380	2.7	3.1	.810	29	2
JUN 12...	20	3	3.0	.070	3.1	.130	1.8	1.9	.180	12	4
JUL 30...	45	20	3.1	.430	3.5	4.400	.00	2.7	2.200	7.0	0
AUG 28...	37	8	2.2	.660	2.9	2.000	1.3	3.3	.880	7.1	3
SEP 12...	100	1	2.6	.630	3.2	1.400	.90	2.3	.780	7.9	2

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
NOV 09...	1350	1	60	<1	0	0	30
FEB 15...	1315	1	50	<1	0	0	<10
MAY 09...	1120	2	50	<1	0	1	40
AUG 28...	1252	1	50	<1	0	1	<10

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV 09...	1	10	.1	1	0	10
FEB 15...	3	10	.4	1	0	10
MAY 09...	1	<1	.0	1	0	3
AUG 28...	0	7	.3	1	0	5

DATE	TIME	PCB TOTAL (UG/L)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	CHLOR-DANE, TOTAL (UG/L)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDE, TOTAL (UG/L)
FEB 15...	1315	.00	0	.0	.00	7.0	.0	9	.00	.0	.00
AUG 28...	1252	.00	14	.0	.01	.0	.0	48	.00	.0	.00

DATE	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ETHION, TOTAL (UG/L)
FEB 15...	.0	.00	.0	.00	.00	.1	.00	.00	.0	.00
AUG 28...	.0	.00	.0	.12	.00	1.0	.00	.00	.0	.00

08181500 MEDINA RIVER AT SAN ANTONIO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARA-THION, TOTAL (UG/L)
FEB										
15...	.00	.0	.00	.0	.01	.0	.00	.00	.0	.00
AUG										
28...	.00	.0	.00	.0	.01	.0	.00	.00	.0	.00

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	MIREX, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
FEB										
15...	.00	.00	--	.00	0	0	.00	.00	.00	.00
AUG										
28...	.00	.00	.0	.00	0	0	.00	.00	.00	.00

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX

LOCATION.--Lat 29°14'15", long 98°21'43", Bexar County, Hydrologic Unit 12100301, on left bank 2,000 ft (610 m) downstream from Braunig Plant Lake, 2.2 mi (3.5 km) southwest of Elmendorf, and 205.5 mi (330.6 km) upstream from mouth. Water-quality sampling site at Farm Road 1604, 2.5 mi (4.0 km) downstream.

DRAINAGE AREA.--1,743 mi² (4,514 km²)

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1962 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 392.50 ft (119.634 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Flow slightly regulated by Medina Lake (station 08179500) and Olmos flood-control reservoir, combined capacity 269,500 acre-ft (332 hm³). Storage began in Medina Lake in 1913, and Olmos Dam was completed in 1926. Water is diverted above station from Medina River for irrigation in the vicinity of Devine and Lytle, with some water diverted for irrigation near San Antonio. During the current year, records furnished by the city of San Antonio show that upstream from this station 140,600 acre-ft (173 hm³) of sewage effluent was discharged into the San Antonio River from the Rilling Road, Leon Creek, Salado Creek, and Mitchell Lake plants. Records furnished by the San Antonio City Public Service Board show that upstream from this station 6,410 acre-ft (7.90 hm³) was pumped into Braunig Lake, 120 acre-ft (0.148 hm³) was released from Braunig Lake, and 17,540 acre-ft (21.6 hm³) was pumped into Calaveras Lake. For additional information relative to sewage effluent, see station 08181500. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08178700.

AVERAGE DISCHARGE.--18 years (water years 1963-80), 518 ft³/s (14.67 m³/s), 375,300 acre-ft/yr (463 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,000 ft³/s (1,130 m³/s) Sept. 27, 1973, gage height, 47.60 ft (14.508 m); minimum, 12 ft³/s (0.34 m³/s) Aug. 24-26, 1963.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, 61 ft (18.6 m) in 1946. Second highest was 53 ft (16.2 m) in 1913, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,840 ft³/s (165 m³/s) Aug. 11 at 0400 hours, gage height, 24.70 ft (7.529 m), no peak above base of 7,000 ft³/s (198 m³/s); minimum, 89 ft³/s (2.52 m³/s) July 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	229	334	358	404	373	188	309	273	315	210	188	198
2	231	328	364	411	383	180	333	1030	309	168	175	203
3	231	328	376	411	392	193	339	387	311	168	148	211
4	236	326	392	399	389	201	320	324	282	161	159	201
5	230	285	373	388	380	197	308	260	279	151	164	213
6	219	247	370	383	377	193	310	226	268	159	171	250
7	219	246	360	390	375	200	313	238	285	175	173	1410
8	223	246	368	385	381	213	319	505	281	173	244	1700
9	236	244	363	388	392	208	298	643	287	173	287	507
10	223	234	371	389	365	222	284	317	267	170	914	367
11	214	232	378	395	366	225	287	262	261	164	4290	323
12	224	234	410	377	364	219	297	252	252	167	1470	309
13	242	274	537	372	361	208	349	280	250	163	473	300
14	256	292	500	385	367	235	319	1540	250	164	317	294
15	298	230	409	388	369	303	298	2060	245	174	280	300
16	331	231	383	387	461	304	284	1700	249	174	253	298
17	320	242	378	382	399	293	278	1210	254	163	246	288
18	317	348	354	382	379	256	276	589	246	152	237	283
19	314	333	377	373	379	256	266	2290	247	167	241	282
20	305	355	381	404	392	258	261	761	242	131	250	294
21	320	446	382	417	356	291	271	1550	238	137	239	278
22	315	432	376	625	350	299	277	831	249	143	240	280
23	303	358	403	482	347	290	269	494	250	203	232	279
24	311	363	438	407	340	300	265	403	271	156	223	274
25	315	472	386	385	277	295	615	365	266	145	231	277
26	316	406	376	377	235	313	394	388	264	138	251	294
27	313	382	389	364	227	402	274	390	263	132	226	384
28	308	383	404	375	206	664	266	383	258	133	226	412
29	315	371	1400	379	203	372	267	367	252	166	206	310
30	340	361	561	382	---	326	263	354	258	174	200	320
31	364	---	440	380	---	320	---	336	---	171	198	---
TOTAL	8618	9563	13367	12366	10185	8424	9209	21008	7949	5025	13152	11339
MEAN	278	319	431	399	351	272	307	678	265	162	424	378
MAX	364	472	1400	625	461	664	615	2290	315	210	4290	1700
MIN	214	230	358	364	203	180	261	226	238	131	148	198
AC-FT	17090	18970	26510	24530	20200	16710	18270	41670	15770	9970	26090	22490

CAL YR 1979 TOTAL 301942 MEAN 827 MAX 9050 MIN 214 AC-FT 598900
WTR YR 1980 TOTAL 130205 MEAN 356 MAX 4290 MIN 131 AC-FT 258300

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1966 to current year. Chemical, biochemical, and pesticide analyses: January 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1966 to current year.
WATER TEMPERATURES: October 1966 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,240 micromhos Jan. 29, 1973, Aug. 8, 1975; minimum daily, 263 micromhos Sept. 27, 1973, Sept. 14, 1978.
WATER TEMPERATURES: Maximum daily, 32.0°C June 21, 1969, and July 4, 1980; minimum daily, 5.5°C Jan. 10, 1973.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 939 micromhos Apr. 13; minimum daily, 367 micromhos May 19.
WATER TEMPERATURES: Maximum daily, 32.0°C July 4; minimum daily, 6.5°C Feb. 22, Apr. 14.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
OCT 04...	1019	37	812	7.8	25.0	10	5.8	3.8	46	11
NOV 09...	1137	34	842	7.6	22.0	10	3.0	4.2	49	23
DEC 13...	1002	233	836	7.7	17.0	5	13	4.9	50	31
JAN 18...	1230	148	854	7.8	18.5	10	2.4	4.0	42	22
FEB 15...	1010	148	850	7.7	19.0	10	7.5	4.6	49	12
MAR 13...	1120	22	890	7.8	21.0	20	10	4.2	47	16
APR 10...	1308	50	911	7.6	23.0	10	4.5	5.8	68	10
MAY 08...	1537	69	873	7.6	25.0	10	580	4.7	57	9.5
JUN 12...	0905	46	933	7.7	27.0	10	4.0	3.5	44	7.1
JUL 30...	1615	123	859	--	31.0	15	4.9	6.2	84	8.0
AUG 28...	1410	22	908	7.8	30.0	10	5.2	4.8	65	13
SEP 12...	1503	50	858	7.6	29.0	20	35	4.6	60	11

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)
OCT 04...	290	39	83	19	59	1.5	6.3	300	0
NOV 09...	270	25	79	18	56	1.5	5.9	300	0
DEC 13...	290	48	83	19	56	1.4	5.5	290	0
JAN 18...	300	49	85	20	59	1.5	6.3	300	0
FEB 15...	280	39	78	20	63	1.6	6.1	290	0
MAR 13...	290	49	85	20	70	1.8	7.1	300	0
APR 10...	280	30	81	18	71	1.9	6.7	300	0
MAY 08...	270	29	79	17	65	1.7	6.5	290	0
JUN 12...	300	50	89	20	72	1.8	7.4	310	0
JUL 30...	260	18	76	18	69	1.8	6.6	300	0
AUG 28...	290	36	84	19	71	1.8	6.8	310	0
SEP 12...	270	29	79	17	62	1.7	6.7	290	0

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	IODIDE, DIS- SOLVED (MG/L AS I)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)
OCT									
04...	71	76	.4	--	15	478	34	8	1.8
NOV									
09...	67	72	.4	--	14	460	13	11	2.2
DEC									
13...	75	75	.3	--	14	471	36	10	.98
JAN									
18...	74	75	.4	--	19	486	32	8	.78
FEB									
15...	77	77	.4	--	11	476	19	12	2.8
MAR									
13...	83	87	.5	--	14	515	12	12	.20
APR									
10...	76	86	.4	.00	15	502	15	8	3.9
MAY									
08...	56	82	.5	--	15	464	950	46	.81
JUN									
12...	85	90	.6	--	16	533	2	1	2.7
JUL									
30...	69	79	.6	--	15	481	25	0	2.1
AUG									
28...	78	90	.5	--	16	518	0	0	1.9
SEP									
12...	72	80	.5	--	16	476	51	3	1.6

DATE	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	PHENOLS (UG/L)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
OCT									
04...	.770	2.6	2.900	1.1	4.0	3.100	7.4	3	.10
NOV									
09...	.830	3.0	5.900	1.0	6.9	1.100	52	--	.10
DEC									
13...	.620	1.6	2.300	3.9	6.2	6.200	14	3	.10
JAN									
18...	.620	1.4	2.000	7.1	9.1	2.500	13	3	.10
FEB									
15...	1.100	3.9	1.900	1.3	3.2	2.200	9.1	4	.10
MAR									
13...	.010	.21	.020	6.6	6.6	3.400	9.5	1	.20
APR									
10...	.000	3.9	6.400	7.6	14	2.400	18	3	.20
MAY									
08...	.390	1.2	2.500	7.2	9.7	2.300	24	1	.00
JUN									
12...	.970	3.7	5.200	.80	6.0	2.700	11	2	.10
JUL									
30...	1.500	3.6	4.100	.40	4.5	1.800	7.4	1	.10
AUG									
28...	.870	2.8	.280	7.0	7.3	3.100	9.7	1	.40
SEP									
12...	.640	2.2	5.000	1.2	6.2	5.000	8.6	2	.10

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
NOV							
09...	1137	1	50	<1	8	0	120
FEB							
15...	1010	1	40	<1	10	0	<10
MAY							
08...	1537	2	70	<1	0	2	30
AUG							
28...	1410	2	50	<1	0	2	20

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV						
09...	2	30	.0	0	0	20
FEB						
15...	3	20	.3	1	0	10
MAY						
08...	0	20	.2	1	0	7
AUG						
28...	3	20	.3	1	0	30

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	PCB TOTAL (UG/L)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	CHLORDANE, TOTAL (UG/L)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDE, TOTAL (UG/L)
FEB 15...	1010	.00	0	.00	.00	9.1	.0	14	.00	.0	.00
AUG 28...	1410	.00	20	.00	.00	.0	.0	47	.00	1.1	.00

DATE	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ETHION, TOTAL (UG/L)
FEB 15...	.0	.00	.0	.21	.00	.0	.00	.00	.0	.00
AUG 28...	<3.6	.00	.0	.36	.00	1.1	.00	.00	.0	.00

DATE	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARATHION, TOTAL (UG/L)
FEB 15...	.00	.0	.00	.0	.01	.0	.00	.00	.0	.00
AUG 28...	.00	.0	.00	.1	.01	.0	.00	.00	.0	.00

DATE	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	MIREX, TOTAL IN BOTTOM MATERIAL (UG/KG)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
FEB 15...	.00	.00	--	.00	0	0	.00	.01	.01	.00
AUG 28...	.00	.00	.0	.00	0	0	.00	.04	.00	.00

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCTANCE (MICROMHOS)	DISSOLVED SOLIDS (MG/L)	DISSOLVED SOLIDS (TONS)	DISSOLVED CHLORIDE (MG/L)	DISSOLVED CHLORIDE (TONS)	DISSOLVED SULFATE (MG/L)	DISSOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	8618	809	459	10700	71	1660	73	1700	290
NOV.	1979	9563	793	450	11600	69	1780	71	1850	280
DEC.	1979	13367	746	424	15300	63	2270	67	2440	270
JAN.	1980	12366	796	451	15100	69	2320	72	2400	280
FEB.	1980	10185	827	468	12900	74	2040	74	2040	290
MAR.	1980	8424	842	477	10800	77	1750	76	1720	290
APR.	1980	9209	873	494	12300	81	2020	78	1940	300
MAY	1980	21008	580	331	18800	43	2430	53	3000	220
JUNE	1980	7949	882	499	10700	83	1780	79	1700	300
JULY	1980	5025	871	493	6690	81	1100	78	1060	300
AUG.	1980	13152	693	394	14000	56	2000	63	2230	260
SEPT	1980	11339	696	395	12100	58	1780	63	1930	250
TOTAL		130205	**	**	151000	**	22900	**	24000	**
WTD. AVG.		356	757	429	**	65	**	68	**	270

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	785	840	799	729	838	884	837	874	850	836	848	875
2	782	835	806	745	835	889	877	569	825	881	879	832
3	819	826	792	756	811	844	878	755	837	898	873	818
4	828	819	777	792	805	827	896	752	874	900	860	868
5	831	805	811	801	795	857	888	786	872	890	822	877
6	829	795	816	809	818	864	878	814	885	860	860	830
7	823	812	822	795	836	870	847	840	896	845	875	446
8	783	805	819	788	834	886	843	700	883	840	863	371
9	794	842	817	804	850	892	885	580	855	873	855	566
10	822	820	797	810	835	862	892	905	840	880	747	703
11	798	826	801	806	807	852	915	820	892	884	550	771
12	835	830	826	822	816	881	892	783	899	896	520	823
13	827	828	822	818	837	895	939	795	920	909	608	800
14	849	813	707	803	840	902	816	464	915	868	684	769
15	794	829	760	794	850	913	838	431	896	840	735	823
16	803	828	790	828	790	918	884	438	879	873	806	815
17	821	843	787	826	782	864	891	463	858	874	835	863
18	824	802	791	833	790	853	915	656	900	877	789	885
19	837	795	822	840	804	874	930	367	913	908	787	861
20	820	780	823	816	835	884	932	531	896	898	830	835
21	818	730	822	789	816	898	898	450	902	873	864	832
22	745	722	824	774	859	903	876	570	892	833	870	836
23	791	735	819	700	855	916	915	734	873	869	878	837
24	820	745	760	746	861	870	920	820	860	857	864	880
25	818	763	752	794	834	878	830	904	888	874	843	883
26	819	736	775	820	827	899	824	850	900	883	841	898
27	808	761	771	817	857	750	796	820	905	885	856	848
28	812	781	750	811	865	583	807	814	899	840	885	770
29	776	800	462	806	854	748	831	827	903	819	868	717
30	782	809	594	829	---	824	877	852	887	879	878	763
31	815	---	660	825	---	828	---	873	---	869	872	---
MEAN	810	799	773	798	829	858	875	704	883	871	811	790

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25.0	20.5	14.0	15.0	13.5	16.0	11.5	15.0	27.0	22.0	19.5	---
2	25.0	20.0	15.0	15.0	15.0	13.0	12.0	13.0	18.5	20.5	30.0	19.5
3	25.5	19.0	15.0	16.5	15.0	13.5	14.0	24.0	18.5	21.0	30.0	29.0
4	25.5	19.0	15.0	14.5	14.5	16.0	13.0	24.5	18.5	32.0	19.5	28.5
5	23.5	20.5	16.5	16.0	16.0	17.0	22.0	15.0	19.0	31.0	19.5	29.0
6	23.0	20.5	18.0	16.0	15.5	16.5	22.0	15.5	---	30.0	20.0	28.0
7	24.0	16.0	15.5	15.5	16.5	19.5	14.5	17.0	29.0	20.0	19.5	26.0
8	25.5	19.5	17.0	15.5	18.5	21.0	14.0	16.5	30.0	20.5	17.0	26.5
9	26.0	20.0	17.0	15.5	15.0	20.0	12.0	14.0	20.0	20.5	31.0	27.5
10	24.0	19.0	19.0	16.5	14.0	19.5	12.0	29.0	19.0	---	27.0	27.0
11	22.0	18.0	20.0	17.5	14.0	21.0	14.5	---	19.0	20.5	15.5	28.0
12	24.0	---	20.5	16.0	15.0	21.5	17.0	15.5	19.5	31.0	17.0	28.0
13	24.0	11.5	17.0	17.0	15.0	20.0	20.0	16.0	18.5	30.0	18.5	---
14	24.0	15.5	15.5	16.0	17.0	20.0	6.5	13.5	29.0	20.5	19.5	29.0
15	25.0	10.0	17.0	18.5	19.0	20.0	10.0	13.5	29.0	20.5	20.0	28.0
16	25.5	18.0	18.0	20.0	17.0	22.0	11.0	14.0	20.0	20.5	30.0	28.0
17	26.0	26.0	14.5	20.5	15.0	20.0	13.0	24.0	19.0	21.0	30.0	28.0
18	26.0	21.0	13.5	19.0	13.0	18.5	13.0	25.0	19.5	20.5	20.0	28.5
19	26.0	22.0	15.0	20.0	15.0	18.5	21.0	13.5	21.0	31.0	20.0	28.5
20	25.0	23.5	16.0	21.0	17.0	20.0	23.0	15.0	22.0	31.0	20.0	29.5
21	25.0	21.5	18.5	19.0	8.5	19.5	13.0	15.0	28.0	20.5	20.0	29.0
22	25.5	18.0	20.0	18.5	6.5	19.0	13.0	15.0	31.0	22.0	20.5	29.0
23	21.5	---	21.0	15.0	20.0	21.0	14.0	16.0	20.0	20.5	31.0	28.5
24	19.5	16.0	---	15.5	21.0	21.0	14.5	29.0	20.5	20.5	31.0	28.5
25	20.0	17.0	17.0	16.0	18.0	20.5	---	30.0	20.5	20.0	20.0	29.0
26	21.0	16.0	15.5	16.0	17.0	11.0	22.0	---	20.5	30.0	18.0	28.0
27	22.0	18.0	18.5	16.0	16.5	11.0	22.0	18.0	20.5	30.5	18.5	28.0
28	22.0	18.0	19.0	15.0	16.5	9.0	11.5	18.0	31.0	21.0	19.0	28.0
29	23.5	15.5	19.0	14.5	14.5	21.0	15.5	18.0	31.0	20.0	19.0	28.0
30	24.5	13.0	17.0	11.0	---	19.0	14.5	18.5	20.5	21.0	31.5	27.0
31	21.5	---	---	13.5	---	11.0	---	28.0	---	20.5	31.0	---
MEAN	24.0	18.5	17.0	16.5	15.5	18.0	15.0	18.5	22.5	23.5	22.5	28.0

08183500 SAN ANTONIO RIVER NEAR FALLS CITY, TX

LOCATION.--Lat 28°57'05", long 98°03'50", Karnes County, Hydrologic Unit 12100303, on left bank 23 ft (7 m) downstream from bridge on Farm Road 791, 0.9 mi (1.4 km) upstream from Scared Dog Creek, 3.6 mi (5.8 km) southwest of Fall City, and 150.5 mi (242.2 km) upstream from mouth.

DRAINAGE AREA.--2,113 mi^2 (5,473 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1925 to current year.

REVISED RECORDS.--WSP 1732: 1947(M). WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 285.49 ft (87.017 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. For diversions and regulation above station, see **REMARKS** for Salado Creek (upper station) at San Antonio (station 08178700), Medina River at San Antonio (station 08181500), and San Antonio River near Elmendorf (station 08181800). Flow is slightly regulated by Calaveras Lake on Calaveras Creek, which enters the San Antonio River downstream from the station near Elmendorf. Flow is affected at times by discharge from the flood-detention pools of ten floodwater-retarding structures with a combined detention capacity of 26,130 acre-ft (32.2 hm^3). These structures control runoff from 73.8 mi^2 (191.1 km^2). Records furnished by the San Antonio City Public Service Board show that during the current year no water was released into Calaveras Creek from Calaveras Lake.

AVERAGE DISCHARGE.--55 years (water years 1926-80), 393 ft^3/s (11.13 m^3/s), 284,700 acre-ft (351 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,400 ft^3/s (1,340 m^3/s) Sept. 29, 1946, gage height, 33.80 ft (10.302 m), from floodmark; minimum, 15 ft^3/s (0.42 m^3/s) June 27, 28, 1956.
Maximum stage since at least 1875, that of Sept. 29, 1946.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1913 reached a stage of 28.4 ft (8.66 m), from floodmark, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,120 ft^3/s (145 m^3/s) May 15 at 1800 hours, gage height, 8.58 ft (2.615 m), no other peak above base of 4,000 ft^3/s (113 m^3/s); minimum, 119 ft^3/s (3.37 m^3/s) July 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	262	374	358	511	418	225	307	252	380	224	173	193
2	252	354	355	453	413	221	307	254	354	227	174	188
3	256	338	360	438	414	204	320	850	326	184	207	197
4	253	347	363	443	432	194	341	511	328	165	180	202
5	253	340	387	436	430	207	333	347	307	162	153	214
6	261	333	373	434	426	215	322	279	288	156	157	204
7	250	267	361	428	419	205	321	236	279	147	176	1120
8	241	250	351	423	421	202	314	243	281	152	177	1370
9	233	251	356	427	412	209	327	293	285	164	188	1870
10	239	246	358	429	432	216	314	776	275	164	961	819
11	246	246	351	431	422	208	296	426	278	163	1740	517
12	237	236	363	430	403	228	286	291	264	163	2720	431
13	232	226	376	429	407	228	289	255	259	156	2280	377
14	246	231	477	414	400	214	304	276	252	160	746	353
15	276	301	583	414	403	203	330	2400	254	156	441	339
16	282	262	444	433	402	270	296	2940	249	153	368	327
17	346	229	393	434	440	314	287	2180	241	164	339	335
18	351	232	366	429	497	314	282	1360	250	165	298	330
19	343	297	356	422	421	279	282	2170	249	152	280	325
20	341	315	362	429	419	260	282	1970	243	154	277	327
21	337	350	369	426	414	258	273	1320	241	158	275	332
22	324	378	376	463	421	264	264	1390	238	128	270	329
23	339	495	376	561	387	312	271	1230	234	134	269	308
24	322	387	374	597	391	298	267	651	241	149	264	315
25	324	362	433	480	384	283	261	499	244	197	252	309
26	331	438	417	433	355	290	388	437	250	154	238	306
27	334	438	368	421	273	289	567	425	244	146	253	317
28	337	385	389	412	254	330	294	431	240	142	250	366
29	331	381	407	400	242	625	254	424	241	141	235	491
30	327	376	1160	417	---	465	256	410	236	129	225	396
31	348	---	795	415	---	337	---	396	---	164	202	---
TOTAL	9054	9665	13157	13712	11552	8367	9235	25922	8051	4973	14768	13507
MEAN	292	322	424	442	398	270	308	836	268	160	476	450
MAX	351	495	1160	597	497	625	567	2940	380	227	2720	1870
MIN	232	226	351	400	242	194	254	236	234	128	153	188
AC-FT	17960	19170	26100	27200	22910	16600	18320	51420	15970	9860	29290	26790

CAL YR 1979 TOTAL 325482 MEAN 892 MAX 5110 MIN 226 AC-FT 645600
WTR YR 1980 TOTAL 141963 MEAN 388 MAX 2940 MIN 128 AC-FT 231600

08183500 SAN ANTONIO RIVER NEAR FALLS CITY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1968 to current year. Sediment analyses: January 1966 to September 1975.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)
OCT 01...	1506	268	988	7.9	25.0	5.5	66	4.2	320	65
NOV 09...	0948	244	911	7.6	20.0	4.2	47	10	290	65
DEC 12...	1400	367	886	8.0	18.0	4.2	44	5.7	280	52
JAN 18...	1047	435	862	7.7	18.0	5.2	55	3.1	300	67
FEB 14...	1100	400	850	8.1	14.5	7.3	71	4.2	310	88
MAR 13...	0915	220	1000	7.8	20.5	4.7	52	6.0	320	74
APR 10...	1022	309	927	7.6	21.0	3.4	38	5.1	300	68
MAY 08...	1300	244	883	7.6	24.5	2.7	33	2.8	260	55
JUN 11...	1313	284	970	8.0	28.5	5.9	76	6.7	290	57
JUL 10...	1545	152	991	8.8	31.0	17.0	233	18	320	83
AUG 25...	1600	264	917	7.7	30.5	4.8	64	2.2	300	67
SEP 11...	1320	540	480	7.2	27.0	3.6	45	--	170	37

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT 01...	93	22	75	1.8	7.6	290	0	100	95	.4
NOV 09...	85	20	65	1.6	5.4	280	0	98	85	.4
DEC 12...	83	18	60	1.6	5.3	280	0	83	83	.3
JAN 18...	86	20	64	1.6	5.6	280	0	85	76	.3
FEB 14...	91	20	61	1.5	5.5	270	0	87	77	.4
MAR 13...	92	22	84	2.0	7.3	300	0	120	100	.4
APR 10...	88	19	72	1.8	6.3	280	0	93	89	.3
MAY 08...	76	17	67	1.8	6.4	250	0	93	90	.4
JUN 11...	85	20	79	2.0	7.5	290	0	100	100	.5
JUL 10...	92	23	94	2.3	7.2	250	22	110	110	.7
AUG 25...	86	20	84	2.1	7.2	280	0	97	110	.5
SEP 11...	53	8.8	28	.9	5.8	160	0	50	35	.3

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
OCT 01...	15	551	4.7	.26	5.0	.23	.67	.90	3.700
NOV 09...	14	511	4.4	.73	5.1	.34	.96	1.3	1.800
DEC 12...	13	484	1.5	.32	1.8	.30	1.9	2.2	.070
JAN 18...	13	488	2.0	.25	2.2	.06	1.3	1.4	1.900
FEB 14...	14	489	2.5	.21	2.7	.04	1.4	1.4	1.200
MAR 13...	13	587	5.4	.36	5.8	.68	.82	1.5	--
APR 10...	14	520	1.7	.21	1.9	1.0	.60	1.6	1.900
MAY 08...	14	487	5.3	.51	5.8	.26	2.0	2.3	.010
JUN 11...	15	550	1.9	.28	2.2	.18	1.6	1.8	1.800
JUL 10...	--	--	2.6	.04	2.6	.06	1.9	2.0	1.400
AUG 25...	16	559	3.0	.19	3.2	.24	2.6	2.8	2.800
SEP 11...	12	272	2.7	.22	2.9	.04	1.5	1.5	.810

08183900 CIBOLO CREEK CREEK NEAR BOERNE, TX

LOCATION.--Lat 29°46'26", long 98°41'50", Kendall County, Hydrologic Unit 12100304, on left bank 0.6 mi (1.0 km) upstream from Southern Pacific Lines bridge, 0.9 mi (1.4 km) downstream from Menger Creek, and 2.5 mi (4.0 km) southeast of Boerne.

DRAINAGE AREA.--68.4 mi^2 (177.2 km^2).

PERIOD OF RECORD.--March 1962 to current year.

REVISED RECORDS.--WRD TX-73-1: 1964-65, 1966(P), 1968-72(P).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,339.61 ft (408.313 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good No know diversion above station. Flow is affected at times by discharge from flood-detention pools of four floodwater-retarding structures with a combined detention-capacity of 8,850 acre-ft (10.9 hm^3). This structure controls runoff from 34.0 mi^2 (88.1 km^2). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--18 years, 28.8 ft^3/s (0.816 m^3/s), 5.72 in/yr (145 mm/yr), 20,866 acre-ft/yr (25.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,400 ft^3/s (1,030 m^3/s) Sept. 27, 1964, gage height, 19.15 ft (5.837 m), from floodmark, from rating curve extended above 2,500 ft^3/s (70.8 m^3/s) on basis of slope-area measurement at 12,000 ft^3/s (340 m^3/s) and contracted-opening measurement of 36,400 ft^3/s (81,030 m^3/s); no flow at times in 1962-64, 1966-67, and 1971.

Maximum stage since at least 1892, that of Sept. 27, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.-- Second highest flood in 1952 reached a stage of 16.3 ft (4.97 m), discharge 25,600 ft^3/s (725 m^3/s), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 428 ft^3/s (12.1 m^3/s) May 18 at 2330 hours, gage height, 3.58 ft (1.091 m), no peak above base of 900 ft^3/s (25.5 m^3/s); minimum, 0.04 ft^3/s (0.001 m^3/s) Sept. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	3.6	5.2	4.5	3.9	3.6	4.5	2.8	4.3	1.1	.12	.29
2	4.9	3.9	5.2	4.5	3.9	3.6	4.2	3.0	4.4	1.1	.05	.22
3	4.5	4.2	5.2	4.9	3.6	3.3	4.0	3.1	4.5	.99	.08	.22
4	3.9	4.2	5.2	4.9	3.6	3.3	3.8	2.7	4.7	1.1	.13	.12
5	4.0	4.5	5.3	5.1	3.6	3.3	3.6	2.4	4.3	.98	.19	.06
6	4.2	5.2	5.5	4.9	3.6	3.3	3.9	2.3	4.2	.96	.37	.10
7	4.2	5.6	5.3	5.2	3.9	3.3	4.8	3.9	3.9	1.0	.48	5.3
8	4.3	5.6	5.2	5.6	3.9	3.3	4.5	4.3	3.8	1.2	.28	2.0
9	4.8	5.8	5.2	5.6	3.9	3.3	4.0	3.8	3.8	1.1	.16	13
10	4.9	6.0	5.6	5.8	3.6	3.3	3.7	2.7	4.6	1.1	1.2	6.0
11	4.6	6.0	5.8	6.0	3.6	3.3	3.9	2.6	4.1	1.1	1.5	1.7
12	4.5	6.0	10	5.3	3.6	3.3	9.3	3.5	3.5	1.1	.96	.89
13	4.7	5.7	9.3	5.3	3.6	3.3	6.1	16	3.1	1.3	.59	.64
14	5.0	5.6	5.8	5.6	3.6	3.3	4.1	16	3.0	1.3	.51	.71
15	5.2	5.6	5.4	5.9	3.6	3.3	4.0	6.6	2.7	1.1	.62	.65
16	5.4	6.1	4.9	6.6	3.6	3.6	4.2	10	3.0	.92	.68	.65
17	5.2	10	4.2	6.9	3.6	3.9	3.9	5.2	2.7	.81	.72	.79
18	4.9	12	4.2	6.2	3.6	3.9	3.4	18	2.7	.73	.94	.78
19	4.4	5.7	4.2	5.6	3.6	3.9	3.5	47	2.5	.72	.69	.65
20	3.9	6.0	4.3	5.6	3.6	3.9	3.0	5.5	2.5	.81	.68	.78
21	3.9	5.7	4.6	5.6	3.6	3.9	2.8	8.0	2.7	.95	.62	.68
22	4.3	5.0	5.7	5.6	3.6	3.6	2.8	4.8	3.0	.78	.51	.61
23	4.6	4.9	6.7	5.2	3.6	3.6	2.8	4.4	2.9	.70	.57	.55
24	4.6	5.2	6.1	5.2	3.6	3.3	2.8	4.2	2.3	.35	.55	.80
25	4.0	6.3	5.3	5.2	3.6	3.3	6.9	4.2	1.8	.25	.38	1.0
26	3.9	5.3	5.2	5.2	3.6	4.9	3.6	4.3	1.7	.39	.37	19
27	3.9	5.2	5.1	5.2	3.6	6.9	2.9	4.8	1.7	.71	.31	21
28	3.8	5.2	5.4	4.5	3.6	7.3	2.8	5.2	1.3	.68	.30	38
29	3.6	5.2	5.8	3.9	3.6	4.9	2.8	5.1	1.4	.56	.39	7.4
30	4.7	5.2	5.7	3.9	---	4.1	2.8	4.7	1.4	.84	.48	6.3
31	4.1	---	4.8	3.9	---	4.8	---	4.4	---	.50	.33	---
TOTAL	138.1	170.5	170.9	163.4	105.9	119.9	119.4	215.5	92.5	27.23	15.76	130.89
MEAN	4.45	5.68	5.51	5.27	3.65	3.87	3.98	6.95	3.08	.88	.51	4.36
MAX	5.4	12	10	6.9	3.9	7.3	9.3	47	4.7	1.3	1.5	38
MIN	3.6	3.6	4.2	3.9	3.6	3.3	2.8	2.3	1.3	.25	.05	.06
CFSM	.07	.08	.08	.08	.05	.06	.06	.10	.05	.01	.007	.06
IN.	.08	.09	.09	.09	.06	.07	.06	.12	.05	.01	.01	.07
AC-FT	274	338	339	324	210	238	237	427	183	54	31	260

CAL YR 1979 TOTAL 20464.90 MEAN 56.1 MAX 1060 MIN 3.6 CFSM .82 IN 11.13 AC-FT 40590
WTR YR 1980 TOTAL 1469.98 MEAN 4.02 MAX 47 MIN .05 CFSM .06 IN .80 AC-FT 2920

NOTE.--No gage-height record Jan. 20 to Mar. 28.

08185000 CIBOLO CREEK AT SELMA, TX

LOCATION.--Lat 29°35'38", long 98°18'39", Bexar-Guadalupe County line, Hydrologic Unit 12100304, on right bank 0.6 mi (1.0 km) downstream from Missouri-Kansas-Texas Railroad Co. bridge and 0.9 mi (1.4 km) upstream from bridge on Interstate Highway 35 at Selma.

DRAINAGE AREA.--274 mi² (710 km²).

PERIOD OF RECORD.--March 1946 to current year. Figures for water year 1960 in WSP 1813 are in error and should be disregarded.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 728.34 ft (221.998 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Small diversion above station. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08183900. Considerable flow of Cibolo Creek enters the Edwards and associated limestones in the Balcones Fault Zone, which crosses basin between this station and the one near Boerne (station 08183900).

AVERAGE DISCHARGE.--34 years, 14.8 ft³/s (0.419 m³/s), 10,720 acre-ft/yr (13.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,000 ft³/s (1,840 m³/s) July 16, 1973, gage height, 26.2 ft (7.99 m), from floodmark, from rating curve extended above 16,000 ft³/s (453 m³/s) on basis of field estimate of 54,000 ft³/s (1,530 m³/s) and contracted-opening measurement of 65,000 ft³/s (1,840 m³/s); no flow most of time.

Maximum stage since at least 1869, that of July 16, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 26 ft (7.9 m) occurred in 1889, but stage for flood in 1913 is unknown, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7.7 ft³/s (0.22 m³/s) Sept. 7 at 1400 hours, gage height, 3.13 ft (0.954 m), no peak above base of 400 ft³/s (11.3 m³/s); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.8
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.32
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.12
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.071
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.8
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.2

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CAL YR 1979   TOTAL  5825.29   MEAN 16.0    MAX  1640    MIN  .00   AC-FT  11550
WTR YR 1980   TOTAL     2.12   MEAN   .006  MAX     1.8  MIN  .00   AC-FT      4
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08186000 CIBOLO CREEK NEAR FALLS CITY, TX

LOCATION.--Lat 29°00'50", long 97°55'48", Karnes County, Hydrologic Unit 12100304, on right bank at downstream side of pier of bridge on State Highway 123, 5.7 mi (9.2 km) northeast of Falls City, and 10.4 mi (16.7 km) upstream from mouth.

DRAINAGE AREA.--827 mi^2 (2,142 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1930 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 733: 1931. WSP 1058: 1935. WSP 1562: 1931(M), 1933. WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 264.28 ft (80.553 m) National Geodetic Vertical Datum of 1929. Nov. 4, 1930, to Aug. 4, 1940, water-stage recorder at site 1,600 ft (488 m) upstream at datum 0.56 ft (0.171 m) higher. Aug. 5 to Sept. 13, 1940, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records good. Diversions for irrigation above station. Much of the base flow is effluent from the Carrizo Sands in the vicinity of Sutherland Springs. Flow is affected a times by discharge from flood-detention pools of ten floodwater-retarding structures with combined detention capacity of 16,620 acre-ft (20.5 hm^3). These structures control runoff from 62.9 mi^2 (163 km^2).

AVERAGE DISCHARGE.--50 years, 126 ft^3/s (3.568 m^3/s), 92,290 acre-ft/yr (113 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,600 ft^3/s (952 m^3/s) July 6, 1942, gage height, 34.45 ft (10.500 m); maximum gage height, 35.44 ft (10.802 m) Sept. 28, 1973; no flow July 30, 31, Aug. 4-22, 1956, Aug. 1, 1971.

Maximum stage since at least 1890, that of Sept. 28, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--In October 1913, a stage of 35 ft (10.7 m) occurred, discharge about 35,000 ft^3/s (991 m^3/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,600 ft^3/s (102 m^3/s) and maximum (*):

Date	Time	Discharge		Gage height	
		(ft^3/s)	(m^3/s)	(ft)	(m)
May 19	1100	4,660	132	17.97	5.477
Sept. 7	1200	*15,100	428	27.18	8.284

Minimum discharge, 10 ft^3/s (0.28 m^3/s) Aug. 6-8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	35	35	55	37	36	37	26	43	16	13	19
2	36	32	36	53	37	33	37	29	40	16	11	18
3	36	34	34	49	38	33	37	78	37	15	11	20
4	36	33	35	45	37	32	34	48	36	15	12	31
5	34	33	35	43	38	34	33	39	35	15	12	28
6	32	32	35	41	38	33	31	33	33	16	10	22
7	32	32	36	40	38	34	30	30	32	16	10	7520
8	32	33	35	38	44	35	30	31	31	14	10	1070
9	31	33	35	37	45	35	28	36	29	14	12	831
10	31	33	34	37	41	34	28	37	28	12	245	125
11	31	32	36	37	46	33	28	35	28	12	360	77
12	32	31	38	37	45	34	28	32	29	12	66	65
13	33	31	43	36	45	34	28	31	28	12	29	53
14	33	31	42	35	44	34	28	37	27	12	26	45
15	33	31	41	35	42	32	30	841	26	11	25	40
16	33	32	41	35	40	32	30	1260	25	12	24	36
17	32	32	40	35	37	33	29	325	25	12	23	33
18	32	34	39	36	38	30	27	237	24	12	23	32
19	32	34	39	35	38	31	26	2640	24	11	21	30
20	31	33	39	35	38	32	25	2340	24	12	20	29
21	30	35	39	37	38	32	25	387	23	12	20	29
22	30	41	39	39	38	30	25	363	21	21	19	28
23	31	36	39	42	38	29	24	178	22	16	19	27
24	29	34	39	55	37	31	24	115	20	16	19	26
25	30	36	39	57	36	31	26	95	21	14	18	26
26	31	37	38	52	35	31	28	85	18	13	17	26
27	30	37	39	46	35	36	27	76	18	14	17	29
28	30	37	41	42	35	36	27	66	18	22	17	29
29	32	36	49	39	36	35	27	60	18	51	16	28
30	32	36	52	39	---	40	26	52	16	14	16	29
31	36	---	55	38	---	41	---	47	---	13	16	---
TOTAL	1000	1016	1217	1280	1134	1036	863	9689	799	473	1157	10401
MEAN	32.3	33.9	39.3	41.3	39.1	33.4	28.8	313	26.6	15.3	37.3	347
MAX	37	41	55	57	46	41	37	2640	43	51	360	7520
MIN	29	31	34	35	35	29	24	26	16	11	10	18
AC-FT	1980	2020	2410	2540	2250	2050	1710	19220	1580	938	2290	20630

CAL YR 1979 TOTAL 77336 MEAN 212 MAX 5650 MIN 29 AC-FT 153400
WTR YR 1980 TOTAL 30065 MEAN 82.1 MAX 7520 MIN 10 AC-FT 59630

08186000 CIBOLO CREEK NEAR FALLS CITY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1968 to current year. Chemical and biochemical analyses: October 1969 to current year. Sediment records: October 1968 to September 1969.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to current year.
WATER TEMPERATURES: October 1968 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,270 micromhos May 20, 21, 1971; minimum daily, 143 micromhos Sept. 7, 1980.
WATER TEMPERATURES: Maximum daily, 34.0°C July 31, Aug. 8, 9, 1980; minimum daily, 4.5°C Jan. 7, 1970.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,820 micromhos July 17, 18; minimum daily, 143 micromhos Sept. 7.
WATER TEMPERATURES: Maximum daily, 34.0°C July 31, Aug. 8, 9.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)
OCT 04...	0822	34	1380	8.1	23.0	6.8	79	1.2	420	160
NOV 08...	1610	32	1430	8.1	19.5	10.4	116	2.4	440	170
DEC 12...	1240	41	1443	8.1	15.0	8.6	85	1.3	430	170
JAN 17...	1522	34	1454	8.4	17.5	13.4	140	1.5	430	170
FEB 14...	0945	42	1400	8.3	13.0	10.0	94	1.6	430	170
MAR 12...	1610	33	1550	8.1	23.0	11.5	135	2.0	470	220
APR 09...	1525	26	1500	8.0	21.5	8.1	92	1.5	460	210
MAY 08...	1100	30	1400	8.0	23.0	6.5	76	2.2	400	140
JUN 11...	1215	26	1390	8.1	27.0	8.4	105	.6	390	170
JUL 10...	1442	7.0	1720	8.1	30.0	8.6	116	5.2	480	260
AUG 25...	1335	1.2	1560	8.3	30.0	8.8	116	2.0	410	210
SEP 11...	1110	79	465	7.7	27.0	6.6	82	3.0	140	41

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT 04...	130	24	130	2.8	7.7	320	0	240	150	.3
NOV 08...	130	27	140	2.9	6.8	320	0	260	170	.4
DEC 12...	130	25	150	3.2	6.9	320	0	250	180	.3
JAN 17...	130	26	150	3.1	7.2	310	6	250	170	.3
FEB 14...	130	25	140	2.9	6.4	310	0	230	160	.0
MAR 12...	140	28	160	3.2	7.9	300	0	300	190	.4
APR 09...	140	27	150	3.0	7.5	310	0	270	180	.4
MAY 08...	120	24	140	3.1	7.0	310	0	210	170	.4
JUN 11...	120	23	140	3.1	8.7	270	0	250	170	.4
JUL 10...	140	31	190	3.8	9.1	270	0	340	220	.6
AUG 25...	120	27	180	3.9	9.1	250	0	290	230	.4
SEP 11...	45	6.5	35	1.3	7.5	120	0	68	40	.2

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08186000 CIBOLO CREEK NEAR FALLS CITY, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)
OCT 04...	14	854	1.1	.020	1.1	.050	.50	.55	.140
NOV 08...	14	906	1.9	.020	1.9	.070	.43	.50	.070
DEC 12...	8.7	909	.98	.020	1.0	.050	.72	.77	.700
JAN 17...	9.3	902	.52	.020	.54	.010	1.3	1.3	.300
FEB 14...	8.4	853	1.7	.040	1.7	.020	1.2	1.2	.220
MAR 12...	8.9	983	.16	.010	.17	.020	.67	.69	.190
APR 09...	16	944	2.4	.290	2.7	.300	.52	.82	.210
MAY 08...	17	841	1.5	.030	1.5	.130	1.3	1.4	1.600
JUN 11...	16	861	.47	.050	.52	.080	.49	.57	.190
JUL 10...	18	1080	.32	.010	.33	.090	.61	.70	.130
AUG 25...	16	996	.06	.000	.06	.000	.49	.49	.090
SEP 11...	14	275	.45	.030	.48	.090	1.2	1.3	.310

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	1000	1380	854	2310	160	432	240	644	420
NOV.	1979	1016	1450	899	2470	170	471	260	700	440
DEC.	1979	1217	1440	895	2940	170	561	250	834	440
JAN.	1980	1280	1410	873	3020	160	569	250	848	430
FEB.	1980	1134	1440	891	2730	170	519	250	773	440
MAR.	1980	1036	1540	960	2680	190	526	280	780	460
APR.	1980	863	1530	951	2220	190	433	280	642	460
MAY	1980	9689	423	249	6520	35	907	54	1410	140
JUNE	1980	799	1380	854	1840	160	346	240	515	420
JULY	1980	473	1640	1030	1310	210	266	310	393	480
AUG.	1980	1157	1050	641	2000	110	349	170	524	330
SEPT	1980	10401	239	141	3950	20	548	30	849	82
TOTAL		30065	**	**	34000	**	5930	**	8910	**
WTD. AVG.		82	686	419	**	73	**	110	**	220

08186000 CIBOLO CREEK NEAR FALLS CITY, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1380	1420	1420	1350	1440	1500	1470	1450	1150	1560	1640	1500
2	1310	1440	1450	1340	1450	1510	1470	1480	1170	1600	1650	1490
3	1360	1410	1470	1330	1440	1480	1480	1200	1210	1580	1660	1510
4	1380	1420	1480	1380	1430	1520	1490	1230	1270	1630	1650	1400
5	1360	1430	1490	1430	1440	1540	1500	1280	1280	1650	1640	1450
6	1370	1440	1470	1420	1440	1500	1510	1350	1320	1670	1650	1490
7	1380	1440	1460	1410	1450	1530	1520	1360	1350	1660	1670	143
8	1380	1450	1430	1440	1400	1520	1510	1490	1340	1680	1690	200
9	1370	1460	1440	1470	1390	1510	1500	1400	1350	1690	1760	245
10	1360	1450	1490	1450	1460	1520	1540	1330	1400	1720	1000	382
11	1370	1460	1480	1430	1450	1540	1610	1320	1390	1790	729	479
12	1380	1480	1440	1450	1390	1550	1570	1330	1400	1790	750	625
13	1370	1470	1510	1440	1370	1540	1540	1250	1410	1780	845	744
14	1380	1480	1480	1460	1380	1540	1610	1190	1400	1790	889	850
15	1390	1470	1470	1470	1400	1550	1490	358	1410	1790	925	934
16	1410	1490	1450	1460	1420	1560	1500	349	1420	1800	959	1000
17	1400	1480	1420	1450	1440	1550	1520	377	1440	1820	1040	1060
18	1410	1450	1430	1460	1450	1540	1540	420	1450	1820	1100	1120
19	1320	1440	1430	1470	1440	1580	1550	360	1430	1780	1150	1180
20	1330	1450	1420	1460	1470	1570	1560	262	1450	1790	1270	1200
21	1330	1440	1430	1450	1460	1580	1560	376	1470	1780	1380	1240
22	1340	1450	1440	1440	1450	1600	1580	462	1480	1700	1450	1270
23	1400	1440	1450	1420	1440	1610	1570	481	1490	1720	1530	1300
24	1430	1440	1450	1370	1450	1600	1590	563	1510	1710	1580	1350
25	1420	1450	1440	1330	1460	1580	1580	700	1520	1740	1560	1370
26	1450	1460	1450	1350	1480	1570	1510	757	1530	1720	1580	1390
27	1410	1450	1460	1370	1470	1550	1520	827	1540	1700	1570	1400
28	1420	1440	1440	1380	1480	1530	1500	900	1530	1670	1550	1410
29	1420	1450	1430	1400	1520	1540	1480	963	1570	1200	1560	1390
30	1430	1440	1360	1410	---	1490	1530	1070	1600	1350	1550	1380
31	1410	---	1350	1420	---	1480	---	1170	---	1500	1570	---
MEAN	1380	1450	1450	1420	1440	1540	1530	937	1410	1680	1370	1080

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.0	---	12.0	13.5	8.0	---	20.5	25.0	29.5	30.0	33.0	31.0
2	27.0	---	11.5	12.0	7.0	---	22.0	23.0	29.0	32.0	33.0	30.0
3	26.5	---	10.5	11.5	9.5	---	20.0	24.0	30.0	32.0	31.5	30.0
4	26.0	---	11.0	11.0	11.0	---	21.0	26.0	29.0	31.5	32.0	31.0
5	27.0	---	12.0	11.5	17.5	---	23.0	30.0	31.0	31.0	32.0	31.0
6	---	---	14.5	11.5	14.0	---	24.0	29.0	30.0	32.0	33.0	---
7	27.5	---	14.0	11.0	12.0	---	27.0	27.0	32.0	31.5	32.0	31.0
8	26.0	---	15.5	11.5	12.5	---	25.5	28.0	31.0	30.5	34.0	27.0
9	26.5	---	14.5	11.5	11.0	---	23.0	26.0	30.0	30.5	34.0	26.0
10	27.0	---	14.5	13.0	11.0	---	20.0	24.0	29.0	30.0	---	28.5
11	27.0	---	18.0	14.5	17.0	---	22.0	27.0	28.5	29.0	27.5	28.0
12	26.5	---	15.5	14.0	11.0	---	18.0	28.0	30.0	30.0	---	28.0
13	---	---	13.5	14.5	13.5	---	16.5	29.0	32.0	30.0	30.0	29.0
14	---	---	14.0	15.0	15.0	---	16.0	28.0	30.0	29.0	31.0	28.0
15	26.0	13.5	14.5	17.5	18.0	---	16.0	21.0	28.0	29.0	28.0	29.0
16	26.5	14.5	---	18.0	13.0	22.0	21.0	23.0	30.0	31.0	30.0	29.0
17	27.0	17.0	---	17.0	10.0	20.0	23.0	24.0	29.0	30.0	30.0	30.0
18	26.5	18.5	---	17.5	12.0	19.0	20.0	---	31.0	30.0	30.0	30.0
19	26.5	19.0	---	17.0	---	19.0	20.5	24.0	31.0	31.0	30.5	29.0
20	26.0	22.5	---	15.5	---	23.0	24.0	23.0	32.0	31.0	30.0	29.0
21	---	---	---	15.0	---	21.5	23.0	25.5	33.0	30.5	30.0	31.0
22	26.5	17.5	---	14.0	---	20.0	23.0	25.0	29.0	30.0	30.0	31.0
23	27.0	12.5	---	14.0	---	23.0	24.0	27.0	29.5	31.0	32.0	30.0
24	26.0	13.0	---	14.5	---	22.0	23.0	26.5	31.0	30.5	31.0	30.5
25	26.5	---	---	15.0	---	20.0	24.5	26.0	30.0	31.0	31.5	31.0
26	27.0	15.5	---	14.0	---	18.5	25.0	25.0	30.5	31.0	31.0	31.0
27	26.5	14.5	---	10.0	---	21.0	22.0	28.0	31.5	32.0	31.0	31.0
28	27.5	15.0	---	11.0	---	22.0	22.5	28.0	31.0	33.0	32.0	30.0
29	---	13.5	---	11.0	---	19.0	24.0	27.0	31.0	32.0	32.0	29.0
30	27.0	12.0	---	9.0	---	22.0	22.0	28.0	32.0	32.0	31.0	28.0
31	---	---	14.0	8.5	---	20.0	---	29.0	---	34.0	31.0	---
MEAN	26.5	15.5	13.5	13.5	12.5	21.0	22.0	26.0	30.5	31.0	31.0	29.5

08186500 ECLETO CREEK NEAR RUNGE, TX

LOCATION.--Lat 28°55'12", long 97°46'19", Karnes County, Hydrologic Unit 12100303, on left bank 55 ft (17 m) downstream from Farm Road 81, 215 ft (66 m) left of left end of bridge, 2.6 mi (4.2 km) upstream from Salt Branch, 4.5 mi (7.2 km) northwest of Runge, and 5.2 mi (8.4 km) upstream from mouth.

DRAINAGE AREA.--239 mi^2 (619 km^2).

PERIOD OF RECORD.--March 1962 to current year.
Water-quality records: Sediment: February 1966 to September 1975.

GAGE.--Water-stage recorder. Datum of gage is 215.03 ft (65.541 m) State Department of Highways and Public Transportation datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--18 years, 38.6 ft^3/s (1.093 m^3/s), 2.19 in/yr (56 mm/yr), 27,970 acre-ft/yr (34.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 58,400 ft^3/s (1,650 m^3/s) Sept. 22, 1967, gage height, 33.3 ft (10.15 m), from floodmark, from rating curve extended above 7,300 ft^3/s (207 m^3/s) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood information begins with the flood in June 1903, which reached a stage of 34 ft (10.4 m), discharge 71,000 ft^3/s (2,010 m^3/s). A stage of 32 ft (9.8 m), discharge 39,000 ft^3/s (1,100 m^3/s), occurred in September 1952, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 700 ft^3/s (19.8 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 20	1630	1,020	28.9	9.61	2.929
Sept. 8	1700	*2,590	73.3	14.96	4.560

Minimum discharge, no flow June 19 to July 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.27	.50	1.3	.63	1.1	.65	.71	.03	1.6	.00	.02	.20
2	.26	.50	1.2	.62	1.5	.38	.80	.04	1.2	.00	.02	.29
3	.29	.49	1.2	.79	1.7	.59	.80	.04	.98	.00	.02	.33
4	.32	.36	1.4	.77	1.3	.69	.62	.04	.78	.00	.02	.44
5	.29	.35	1.2	.59	1.3	.94	.42	.03	.55	.00	.02	.50
6	.24	.25	.86	.57	1.3	.92	.42	.03	.40	.00	.03	.83
7	.35	.27	.64	.50	1.4	1.0	.35	.02	.34	.00	.03	178
8	.42	.28	.69	.49	1.7	1.2	.35	.71	.27	.00	.04	1980
9	.39	.33	.65	.42	1.6	1.2	.29	.07	.19	.00	.04	563
10	.42	.35	.75	.46	1.6	1.0	.24	.02	.12	.00	62	38
11	.42	.35	.91	.53	1.4	1.0	.24	.02	.09	.00	63	17
12	.42	.35	.88	.50	1.4	1.6	.24	.02	.14	.00	36	6.8
13	.35	.33	.59	.49	1.4	1.6	.24	.02	.03	.00	12	2.6
14	.35	.45	.47	.42	1.4	1.2	.23	.03	.03	.00	4.3	1.7
15	.35	1.0	.89	.42	1.4	1.0	.20	83	.02	.00	2.0	1.1
16	.29	.80	.64	.42	1.4	.89	.20	379	.01	.00	1.0	.78
17	.29	1.0	.25	.42	1.4	.66	.19	234	.01	.00	.52	.58
18	.29	1.4	.09	.42	1.1	.45	.20	73	.01	.00	.23	.50
19	.35	1.3	.06	.42	1.6	.35	.20	426	.00	.00	.12	.50
20	.29	1.4	.04	.70	1.7	.74	.18	841	.00	.00	.08	.50
21	.29	1.8	.03	1.1	1.4	.64	.12	185	.00	.00	.06	.84
22	.29	2.0	.05	1.0	1.1	.48	.10	47	.00	.32	.07	1.2
23	.29	1.1	.09	1.0	1.0	.42	.10	49	.00	.03	.07	1.0
24	.24	1.2	.19	1.1	.86	.42	.10	21	.00	.01	.08	1.0
25	.24	1.2	.32	1.1	.89	.29	.10	11	.00	.01	.06	.98
26	.24	.96	.37	.91	.78	.26	.07	6.7	.00	.01	.06	1.3
27	.24	1.1	.23	.99	.69	.39	.04	5.1	.00	.01	.06	2.6
28	.22	1.3	.92	1.0	.69	.42	.04	11	.00	.02	.07	4.5
29	.27	1.4	1.2	1.0	.69	.42	.03	26	.00	.04	.08	5.8
30	.42	1.3	.50	1.0	---	.51	.03	3.5	.00	.04	.10	8.9
31	.58	---	.65	.99	---	.66	---	2.1	---	.04	.12	---
TOTAL	9.97	25.42	19.26	21.77	36.80	22.97	7.85	2404.52	6.77	.53	182.32	2821.77
MEAN	.32	.85	.62	.70	1.27	.74	.26	77.6	.23	.017	5.88	94.1
MAX	.58	2.0	1.4	1.1	1.7	1.6	.80	841	1.6	.32	63	1980
MIN	.22	.25	.03	.42	.69	.26	.03	.02	.00	.00	.02	.20
CFSM	.001	.004	.003	.003	.005	.003	.001	.33	.001	.000	.03	.39
IN.	.00	.00	.00	.00	.01	.00	.00	.37	.00	.00	.03	.44
AC-FT	20	50	38	43	73	46	16	4770	13	1.1	362	5600

CAL YR 1979 TOTAL 27842.61 MEAN 76.3 MAX 3170 MIN .03 CFSM .32 IN 4.33 AC-FT 55230
WTR YR 1980 TOTAL 5559.95 MEAN 15.2 MAX 1980 MIN .00 CFSM .06 IN .87 AC-FT 11030

08188500 SAN ANTONIO RIVER AT GOLIAD, TX
(National stream-quality accounting network)

LOCATION.--Lat 28°38'58", long 97°23'04", Goliad County, Hydrologic Unit 12100303, on right bank at upstream side of bridge on U.S. Highway 183, 1.2 mi (1.9 km) southeast of courthouse in Goliad, 11.7 mi (18.8 km) upstream from Manahuilla Creek, and 66.5 mi (107.0 km) upstream from mouth.

DRAINAGE AREA.--3,921 mi^2 (10,155 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1924 to March 1929, February 1939 to current year.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 91.08 ft (27.761 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 31, 1929, nonrecording gage at Texas and New Orleans Railroad Co. bridge 0.9 mi (1.4 km) upstream at same datum.

REMARKS.--Water-discharge records good. Many diversions and regulations above station (see station 08181800). Flow is affected at times by discharge from flood-detention pools of 36 floodwater-retarding structures with combined detention capacity of 66,730 acre-ft (82.3 hm^3). These structures control runoff from 213 mi^2 (552 km^2).

AVERAGE DISCHARGE.--45 years (water years 1925-28, 1940-80), 666 ft^3/s (18.86 m^3/s), 482,500 acre-ft/yr (595 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 138,000 ft^3/s (3,910 m^3/s) Sept. 23, 1967, gage height, 53.7 ft (16.37 m), from floodmark, from rating curve extended above 26,000 ft^3/s (736 m^3/s) on basis of slope-area measurement of peak flow; minimum observed, 1.2 ft^3/s (0.034 m^3/s) June 16, 1956.

Maximum stage since 1869, that of Sept. 23, 1967. Flood of July 9, 1942, reached a stage of 44.9 ft (13.69 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in October 1913 and June 15, 1935, reached about the same stage as flood in 1942. Maximum stage since about 1800 occurred in 1869 and was several feet higher than flood of Sept. 23, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,240 ft^3/s (233 m^3/s) Sept. 9 at 2300 hours, gage height 25.68 ft (7.827 m), no other peak above base of 6,000 ft^3/s (170 m^3/s); minimum, 161 ft^3/s (4.56 m^3/s) July 25, 26, Aug. 1, 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	356	407	471	1110	495	326	525	331	528	298	169	282
2	352	425	466	762	497	309	446	328	505	297	176	271
3	344	451	454	607	499	292	419	323	485	283	198	265
4	332	436	451	551	493	288	407	386	458	279	192	256
5	331	422	452	534	492	277	408	793	435	251	209	259
6	329	428	457	531	505	263	421	557	428	215	222	288
7	332	421	475	523	502	270	415	450	406	207	184	287
8	336	412	467	516	504	280	399	413	387	202	181	3930
9	326	366	458	508	505	275	387	368	373	191	205	7590
10	315	341	449	504	502	270	371	350	376	188	687	6300
11	308	337	452	507	493	277	383	442	373	191	2560	1810
12	315	335	464	506	511	289	375	710	360	202	4260	936
13	324	331	463	504	506	281	357	509	356	196	2490	726
14	317	323	476	503	489	292	347	410	340	197	2600	587
15	315	317	484	501	490	297	353	516	333	191	1420	526
16	323	318	572	490	483	290	377	1750	321	185	742	486
17	348	375	628	491	478	292	404	5170	321	181	530	458
18	359	364	517	501	476	329	376	3940	317	174	463	435
19	412	326	482	500	519	376	355	2080	308	181	408	429
20	419	326	463	509	543	378	342	3810	314	185	369	418
21	415	387	456	795	493	352	338	5550	311	184	350	407
22	412	425	461	574	488	330	335	3110	302	172	341	404
23	405	440	469	527	481	325	324	1620	301	197	335	400
24	398	479	471	547	480	333	314	1840	298	187	328	393
25	410	552	467	667	452	367	320	1110	294	169	323	371
26	400	481	465	659	447	371	321	848	297	168	317	375
27	401	461	505	567	438	358	312	716	303	208	307	395
28	409	519	501	523	414	370	439	611	310	206	296	384
29	414	515	503	511	349	375	551	592	305	203	303	386
30	420	477	515	499	---	424	382	599	300	194	301	481
31	418	---	633	488	---	640	---	557	---	244	290	---
TOTAL	11295	12197	15047	17515	14024	10196	11503	40789	10745	6426	21756	30535
MEAN	364	407	485	565	484	329	383	1316	358	207	702	1018
MAX	420	552	633	1110	543	640	551	5550	528	298	4260	7590
MIN	308	317	449	488	349	263	312	323	294	168	169	256
AC-FT	22400	24190	29850	34740	27820	20220	22820	80900	21310	12750	43150	60570

CAL YR 1979 TOTAL 466071 MEAN 1277 MAX 9060 MIN 308 AC-FT 924500
WTR YR 1980 TOTAL 202028 MEAN 552 MAX 7590 MIN 168 AC-FT 400700

08188500 SAN ANTONIO RIVER AT GOLIAD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: September 1945 to September 1946, September 1958 to current year. Chemical and biochemical analyses: January 1968 to current year. Pesticide analyses: January 1968 to current year. Sediment records: October 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: September 1945 to September 1946, September 1958 to current year.
WATER TEMPERATURES: September 1958 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,580 micromhos July 22, 1978; minimum daily, 138 micromhos Oct. 27, 1960.
WATER TEMPERATURES (1958-79): Maximum daily, 36.0°C June 5, 1969; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,420 micromhos Mar. 10; minimum daily, 159 micromhos Sept. 9.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 03...	1154	342	1190	8.1	25.0	5	26	7.0	84	1.6	75	220
NOV 05...	1405	422	1069	8.1	19.0	5	28	8.5	90	2.4	200	210
DEC 05...	1338	456	1055	8.0	16.5	5	17	8.8	89	1.3	130	210
JAN 15...	1440	504	1070	8.0	16.0	10	26	10.7	106	2.3	300	260
FEB 13...	1444	504	1080	8.3	13.0	5	22	10.0	94	1.5	68	84
MAR 10...	1410	270	1400	8.1	19.5	5	6.7	9.5	103	1.5	60	K49
APR 09...	1240	386	1170	8.0	21.0	10	42	7.5	83	1.7	140	750
MAY 05...	1530	798	962	7.9	24.5	5	97	6.4	76	1.4	K270	1600
JUN 09...	1210	371	1090	8.5	29.0	25	29	7.3	94	4.4	K40	K57
JUL 09...	1220	191	1280	8.7	30.0	25	12	9.6	130	6.4	44	100
AUG 05...	1200	235	1270	8.5	29.0	10	32	7.5	97	2.2	330	280
SEP 09...	1115	7620	159	7.7	25.0	300	370	5.5	65	3.3	K6000	6800

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT 03...	370	110	110	23	110	2.5	7.4	320	0	130	150	.4
NOV 05...	360	120	110	21	91	2.1	5.8	300	0	120	120	.4
DEC 05...	340	98	100	23	94	2.2	6.0	300	0	110	140	.4
JAN 15...	340	100	100	22	92	2.2	6.0	290	0	110	130	.4
FEB 13...	340	100	100	23	96	2.3	6.4	290	0	120	140	.4
MAR 10...	410	150	120	27	140	3.0	7.0	320	0	180	200	.5
APR 09...	370	120	110	22	100	2.3	7.7	300	0	120	140	.4
MAY 05...	300	91	89	19	81	2.0	7.0	270	0	110	100	.4
JUN 09...	330	89	98	21	95	2.3	7.2	280	7	110	130	.4
JUL 09...	380	140	110	26	130	2.9	7.7	240	30	150	190	.7
AUG 05...	380	140	110	25	130	2.9	8.2	280	6	150	190	.5
SEP 09...	53	0	18	1.9	8.1	.5	4.7	64	0	10	8.1	.2

08188500 SAN ANTONIO RIVER AT GOLIAD, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 03...	19	738	727	66	13	--	--	4.4	4.4	.120	.030	.98
NOV 05...	16	642	653	59	23	--	--	4.7	4.8	.030	.070	1.1
DEC 05...	16	663	659	33	3	--	--	5.3	4.9	.000	.030	1.3
JAN 15...	16	635	642	66	13	--	--	5.5	5.0	.040	.070	.90
FEB 13...	20	651	669	76	20	--	--	5.3	4.6	.030	.020	1.5
MAR 10...	17	865	861	9	5	--	--	2.9	2.6	.020	.020	.91
APR 09...	18	718	693	133	23	--	--	6.3	6.2	.130	.120	1.3
MAY 05...	14	604	572	395	19	--	--	6.0	5.6	.090	.060	1.6
JUN 09...	15	660	635	42	9	--	--	3.4	3.0	.060	.020	1.4
JUL 09...	7.0	785	771	34	8	--	--	.83	1.2	.000	.000	2.0
AUG 05...	13	780	772	32	1	--	--	1.8	1.8	.240	.000	1.4
SEP 09...	8.5	109	93	792	108	.460	.450	--	.45	.000	.000	1.1

DATE	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED (MG/L AS C)	PHENOLS (UG/L)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 03...	1.5	1.1	1.5	1.300	1.300	4.8	--	--	1	67	62	97
NOV 05...	1.2	1.1	1.3	1.200	.440	--	5.4	--	4	57	65	95
DEC 05...	1.2	1.3	1.2	3.400	1.400	9.6	--	--	0	54	66	96
JAN 15...	.48	.94	.55	1.700	1.700	4.7	--	--	0	66	90	96
FEB 13...	1.6	1.5	1.6	1.800	1.100	--	10	.9	1	55	75	85
MAR 10...	.72	.93	.74	1.400	1.300	6.7	--	--	0	15	11	88
APR 09...	1.3	1.4	1.4	2.100	2.100	9.9	--	--	1	113	118	97
MAY 05...	1.7	1.7	1.8	1.500	.950	--	6.5	5.1	0	459	989	95
JUN 09...	.98	1.5	1.0	1.300	.930	13	--	--	2	110	110	99
JUL 09...	.97	2.0	.97	.750	.510	13	--	--	1	70	36	99
AUG 05...	1.7	1.6	1.7	1.600	1.200	--	5.6	4.7	0	101	64	100
SEP 09...	1.1	1.1	1.1	.420	.170	17	--	--	0	905	18600	81

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)
NOV 05...	1405	3	1	2	400	300	80	0	0	<1	0
DEC 05...	1338	--	--	--	--	--	--	--	--	--	--
FEB 13...	1444	2	0	2	300	100	200	0	0	0	0
MAR 10...	1410	--	--	--	--	--	--	--	--	--	--
MAY 05...	1530	4	1	3	200	100	70	0	--	<1	10
JUN 09...	1210	--	--	--	--	--	--	--	--	--	--
AUG 05...	1200	5	0	5	100	10	90	0	0	2	0
SEP 09...	1115	--	--	--	--	--	--	--	--	--	--

08188500 SAN ANTONIO RIVER AT GOLIAD, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)
NOV 05...	0	0	0	0	<3	0	0	0	1000	990	10
DEC 05...	--	--	--	--	--	--	--	--	--	--	--
FEB 13...	0	0	0	0	0	2	2	0	770	750	20
MAR 10...	--	--	--	--	--	--	--	--	--	--	--
MAY 05...	10	0	4	--	<3	12	10	2	6500	--	<10
JUN 09...	--	--	--	--	--	--	--	--	--	--	--
AUG 05...	0	0	0	--	<3	5	3	2	1800	--	<10
SEP 09...	--	--	--	--	--	--	--	--	--	--	--

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI)
NOV 05...	8	8	0	50	50	3	.1	.1	.0	6	5
DEC 05...	--	--	--	--	--	--	--	--	--	--	--
FEB 13...	10	10	0	40	20	20	.3	.0	.3	5	0
MAR 10...	--	--	--	--	--	--	--	--	--	--	--
MAY 05...	20	20	0	330	330	1	.2	.1	.1	17	12
JUN 09...	--	--	--	--	--	--	--	--	--	--	--
AUG 05...	21	16	5	110	110	1	.2	.1	.1	9	2
SEP 09...	--	--	--	--	--	--	--	--	--	--	--

DATE	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
NOV 05...	1	1	0	1	0	0	0	10	3	7
DEC 05...	--	--	--	--	0	--	--	--	--	--
FEB 13...	5	1	0	1	0	0	0	30	10	20
MAR 10...	--	--	--	--	0	--	--	--	--	--
MAY 05...	5	1	0	1	0	0	0	40	40	4
JUN 09...	--	--	--	--	0	--	--	--	--	--
AUG 05...	7	1	0	1	0	0	0	10	5	5
SEP 09...	--	--	--	--	0	--	--	--	--	--

08188500 SAN ANTONIO RIVER AT GOLIAD, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	CHLORDANE, TOTAL (UG/L)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG)
NOV 05...	1545	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 13...	1444	ND	--	ND	--	ND	--	ND	--	ND	--

DATE	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIAZINON, TOTAL (UG/L)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIELDRIN TOTAL (UG/L)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ETHION, TOTAL (UG/L)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR, TOTAL (UG/L)
NOV 05...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 13...	ND	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)	MALATHION, TOTAL (UG/L)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	METHOXYCHLOR, TOTAL (UG/L)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARATHION, TOTAL (UG/L)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG)
NOV 05...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 13...	--	ND	--	ND	--	ND	--	ND	--	ND	--

DATE	METHYL TRITHION, TOTAL (UG/L)	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG)	PARATHION, TOTAL (UG/L)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	TOXAPHENE, TOTAL (UG/L)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	TOTAL TRITHION (UG/L)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
NOV 05...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 13...	ND	--	ND	--	ND	--	ND	--	--	--	--

DATE	LENGTH OF EXPOSURE (DAYS)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2)	CHLOR-B PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2)	BIOMASS CHLOROPHYLL RATIO PERIPHYTON (UNITS)
AUG 05...	27	[illegible]	1.89	.150	.000	1067

08188500 SAN ANTONIO RIVER AT GOLIAD, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE TIME	NOV 11,79 1405	MAR 10,80 1410	MAY 5,80 1530	JUN 9,80 1210
TOTAL CELLS/ML	57	3500	1100	89000
DIVERSITY: DIVISION	1.5	1.2	1.5	1.4
.CLASS	1.5	1.2	1.5	1.4
..ORDER	1.5	1.4	2.3	1.8
...FAMILY	1.5	1.5	2.6	2.6
....GENUS	1.5	1.6	2.6	3.3

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	--	-
...CHLOROCOCCACEAE								
....CHLOROCOCCUM	--	-	43	1	--	-	--	-
...HYDRODICTYACEAE								
....PEDIASTRUM	--	-	--	-	--	-	--	-
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	--	-	1200	1
....MICRACTINIUM	--	-	--	-	--	-	12000	14
...OOCYSTACEAE								
....ANKISTRODESMUS	--	-	--	-	52	5	*	0
....CHLORELLA	--	-	43	1	--	-	*	0
....DICTYOSPHAERIUM	--	-	--	-	--	-	1200	1
....KIRCHNERIELLA	--	-	--	-	--	-	3800	4
....OOCYSTIS	--	-	--	-	--	-	--	-
....POLYEDRIOPSIS	--	-	--	-	--	-	*	0
....SELENASTRUM	--	-	--	-	--	-	1200	1
....TETRAEDRON	--	-	--	-	--	-	*	0
....TREUBARIA	--	-	--	-	--	-	*	0
....WESTELLA	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	--	-	9500	11
....CRUCIGENIA	--	-	--	-	--	-	1200	1
....SCENEDESMUS	--	-	*	0	52	5	17000#	19
....TETRASTRUM	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	14#	25	690#	20	26	2	--	-
..ZYGNEMATALES								
...DESMIDIACEAE								
....COSMARIUM	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	--	-	65	2	150	14	5600	6
....MELOSIRA	--	-	22	1	--	-	--	-
..PENNALES								
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	*	0	--	-	--	-
...NAVICULACEAE								
....NAVICULA	--	-	32	1	39	3	--	-
...NITZSCHIACEAE								
....NITZSCHIA	29#	50	160	5	230#	21	5900	7
...SURIRELLACEAE								
....SURIRELLA	--	-	32	1	13	1	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	*	0	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	--	-	--	-
....ANACYSTIS	--	-	--	-	77	7	19000#	21
....COCCOCHLORIS	--	-	--	-	--	-	2100	2
....GOMPHOSPHAERIA	--	-	--	-	--	-	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	7700	9
...OSCILLATORIACEAE								
....LYNGBYA	--	-	--	-	--	-	--	-
....OSCILLATORIA	--	-	2400#	68	440#	40	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	14#	25	--	-	26	2	--	-
....TRACHELOMONAS	--	-	--	-	--	-	*	0
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	--	-	*	0

NOTE: # - DOMINANT ORGANISM, EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08188500 SAN ANTONIO RIVER AT GOLIAD, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE TIME	JUL 9,80 1220	AUG 5,80 1200	SEP 9,80 1115
TOTAL CELLS/ML	130000	98000	1200
DIVERSITY: DIVISION	1.3	1.5	0.9
.CLASS	1.3	1.5	0.9
..ORDER	1.3	2.1	1.0
...FAMILY	2.1	2.8	1.0
....GENUS	3.2	3.2	1.8

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHARACIACEAE						
....SCHROEDERIA	*	0	*	0	--	-
...CHLOROCOCCACEAE						
....CHLOROCOCCUM	--	-	--	-	--	-
...HYDRODICTYACEAE						
....PEDIASTRUM	--	-	5100	5	--	-
...MICRACTINIACEAE						
....GOLENKINIA	*	0	--	-	--	-
....MICRACTINIUM	9100	7	22000#	22	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	3300	3	1400	1	--	-
....CHLORELLA	1500	1	--	-	--	-
....DICTYOSPHAERIUM	20000#	16	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	14	1
....OOCYSTIS	1500	1	2100	2	14	1
....POLYEDRIOPSIS	*	0	--	-	--	-
....SELENASTRUM	1500	1	*	0	--	-
....TETRAEDRON	*	0	--	-	--	-
....TREUBARIA	--	-	--	-	--	-
....WESTELLA	3600	3	--	-	14	1
...SCENEDESMACEAE					--	-
....ACTINASTRUM	12000	9	--	-	--	-
....CRUCIGENIA	--	-	930	1	--	-
....SCENEDESMUS	14000	11	11000	11	14	1
....TETRASTRUM	1200	1	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	[illegible]	0	--	-
..ZYGNEMATALES						
...DESMIDIACEAE						
....COSMARIUM	--	-	--	-	14	1
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	13000	10	14000	14	72	6
....MELOSIRA	--	-	--	-	--	-
..PENNALES						
...GOMPHONEMATACEAE						
....GOMPHONEMA	--	-	--	-	--	-
...NAVICULACEAE						
....NAVICULA	--	-	*	0	--	-
...NITZSCHIACEAE						
....NITZSCHIA	--	-	3300	3	43	4
...SURIRELLACEAE						
....SURIRELLA	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....AGMENELLUM	15000	11	3700	4	--	-
....ANACYSTIS	33000#	26	5100	5	--	-
....COCCOCHLORIS	--	-	--	-	--	-
....GOMPHOSPHAERIA	--	-	6500	7	--	-
..HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	--	-	--	-	--	-
...OSCILLATORIACEAE						
....LYNGBYA	--	-	--	-	290#	24
....OSCILLATORIA	--	-	21000#	22	720#	60
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	--	-	*	0	14	1
....TRACHELOMONAS	--	-	*	0	--	-
PYRRHOPHYTA (FIRE ALGAE)						
.DINOPHYCEAE						
..PERIDINIALES						
...GLENODINIACEAE						
....GLENODINIUM	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08188500 SAN ANTONIO RIVER AT GOLIAD, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	11295	1190	708	21600	130	4470	130	4080	380
NOV.	1979	12197	1120	665	21900	130	4380	120	4080	370
DEC.	1979	15047	1060	626	25400	120	4900	110	4670	350
JAN.	1980	17515	976	575	27200	110	5030	100	4920	330
FEB.	1980	14024	1100	650	24600	130	4840	120	4560	360
MAR.	1980	10196	1300	776	21400	170	4670	150	4140	410
APR.	1980	11503	1150	682	21200	140	4290	130	3970	370
MAY	1980	40789	537	311	34300	45	5000	52	5680	200
JUNE	1980	10745	1130	671	19500	140	3920	130	3640	370
JULY	1980	6426	1300	775	13400	170	2940	150	2600	410
AUG.	1980	21756	602	351	20600	56	3290	60	3520	210
SEPT	1980	30535	510	298	24500	47	3910	51	4190	180
TOTAL		202028	**	**	276000	**	51600	**	50100	**
WTD. AVG.		552	856	505	**	95	**	92	**	290

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980 ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1130	1120	1010	881	1100	1250	1040	967	933	1150	1350	1170
2	1200	1130	1020	644	1090	1300	1100	969	983	1160	1380	1180
3	1220	1120	1030	723	1070	1330	1010	1050	984	1200	1220	1160
4	1250	1090	1050	807	1080	1340	1040	1000	1020	1190	1240	1180
5	1240	1060	1090	935	1100	1360	1080	962	1050	1220	1270	1240
6	1250	1080	1080	952	1090	1390	1100	987	1070	1240	1210	1170
7	1280	1110	1100	989	1100	1400	1120	621	1080	1300	1180	1180
8	1270	1140	1090	1010	1080	1380	1130	792	1090	1320	1190	543
9	1240	1160	1080	1020	1070	1400	1170	855	1080	1280	1000	159
10	1250	1190	1070	1050	1060	1420	1180	1080	1110	1230	750	250
11	1280	1200	1060	1060	1070	1400	1200	1090	1130	1290	492	405
12	1270	1220	1090	1080	1090	1370	1190	929	1150	1300	331	415
13	1270	1210	1100	1060	1080	1360	1170	967	1170	1370	418	492
14	1290	1200	1110	1040	1120	1350	1180	858	1180	1360	368	561
15	1300	1220	1110	1060	1100	1340	1190	920	1190	1340	440	665
16	1280	1210	1060	1080	1120	1350	1210	750	1180	1330	482	752
17	1260	1220	1010	1090	1110	1360	1200	356	1190	1330	565	851
18	1240	1200	1020	1080	1090	1320	1170	401	1200	1350	664	932
19	1150	1190	1030	1050	1120	1280	1190	406	1220	1340	725	1000
20	1130	1190	980	1040	1070	1260	1200	469	1230	1360	811	1010
21	1110	1200	1050	828	1080	1230	1180	285	1240	1370	844	1030
22	1120	1100	1080	985	1120	1270	1160	451	1230	1360	945	1040
23	1110	1190	1070	1070	1060	1280	1200	516	1220	1340	987	1040
24	1130	1100	1070	1090	1070	1290	1230	515	1200	1360	1010	1070
25	1140	998	1080	1040	1090	1270	1240	429	1190	1310	1030	1100
26	1130	1010	1090	974	1130	1220	1250	524	1200	1370	1040	1090
27	1140	1050	1070	970	1150	1230	1250	650	1210	1400	1060	1080
28	1110	1040	1050	965	1160	1250	1150	737	1220	1360	1100	1130
29	1090	999	1040	984	1180	1240	1050	827	1220	1280	1130	1090
30	1100	989	1030	1030	---	1250	1080	900	1200	1340	1140	978
31	1110	---	1020	1070	---	1120	---	871	---	1300	1150	---
MEAN	1200	1130	1060	989	1100	1310	1160	746	1150	1300	920	899

08188600 GUADALUPE-BLANCO RIVER AUTHORITY CALHOUN CANAL FLUME NO. 1 NEAR LONG MOTT, TX

LOCATION.--Lat 28°29'44", long 96°46'18", Calhoun County, Hydrologic Unit 12100204, on right bank at concrete Parshall flume No. 1, 518 ft (158 m) upstream from State Highway 185, 1,900 ft (579 m) downstream from pumping station on Goff Bayou, and 1.1 mi (1.8 km) northwest of Long Mott.

PERIOD OF RECORD.--March 1968 to Feburary 1970 (monthly discharge only), March 1970 to current year.

GAGE.--Deflection-vane recorder, duplex water-stage recorder, and Parshall flume. Datum of gage is 23.53 ft (7.172 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Flow is diverted from Guadalupe River 550 ft (168 m) upstream from Guadalupe River near Tivoli (station 08188800), and then through a system of canals, Hog Bayou, and Goff Bayou, a distance of 8.9 mi (14.3 km) to the pumping station on Goff Bayou 1,900 ft (579 m) upstream from flume No. 1. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--12 years (water years 1969-80), 103 ft³/s (2.917 m³/s), 74,620 acre-ft/yr (92.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 311 ft³/s (8.81 m³/s) July 7, 1968; no flow at times in 1968-74 and 1977-80.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	122	57	43	14	14	61	22	180	260	268	115	231
2	135	72	43	14	14	29	43	162	248	266	122	240
3	144	45	35	14	8.0	29	51	199	239	274	115	246
4	151	18	19	14	.00	37	58	191	246	274	112	254
5	150	20	29	14	.00	43	58	145	251	274	120	259
6	158	14	22	14	.00	43	68	130	260	274	122	260
7	158	14	36	14	.00	43	52	178	260	274	98	254
8	158	14	14	14	4.0	43	58	154	260	275	50	256
9	149	14	14	21	43	43	91	86	266	274	.00	284
10	144	14	14	14	43	67	140	78	274	274	.00	281
11	136	24	14	21	43	86	141	72	274	274	.00	281
12	130	29	14	29	43	78	130	78	274	273	.00	283
13	122	29	14	29	29	66	112	108	274	274	.00	274
14	115	9.0	14	29	14	71	86	137	274	274	.00	161
15	107	14	14	25	14	86	126	138	274	274	34	223
16	100	22	14	29	14	86	152	104	274	274	112	220
17	89	18	14	29	14	29	196	86	276	254	130	245
18	115	29	33	29	14	31	145	86	274	239	114	240
19	98	29	43	29	14	63	170	58	274	214	137	241
20	86	29	24	29	14	90	176	97	274	202	158	238
21	86	29	14	29	14	120	144	124	274	189	166	222
22	53	29	14	22	14	115	110	114	274	173	191	214
23	29	29	14	16	14	124	98	121	274	150	217	198
24	29	29	14	70	14	83	73	130	274	130	231	183
25	29	29	14	86	14	80	72	130	274	144	231	174
26	29	29	14	76	14	65	142	148	274	152	236	165
27	29	50	14	43	14	21	187	225	274	144	246	158
28	29	25	14	43	14	14	192	247	274	144	246	165
29	29	32	14	43	52	7.0	173	274	274	144	260	167
30	29	43	14	32	---	.00	182	266	274	128	289	141
31	29	---	14	14	---	.00	---	260	---	108	271	---
TOTAL	2975	838.0	621	899	503.00	1753.00	3448	4506	8046	6885	4123.00	6758
MEAN	96.0	27.9	20.0	29.0	17.3	56.5	115	145	268	222	133	225
MAX	158	72	43	86	52	124	196	274	276	275	289	284
MIN	29	9.0	14	14	.00	.00	22	58	239	108	.00	141
AC-FT	5900	1660	1230	1780	998	3480	6840	8940	15960	13660	8180	13400

CAL YR 1979 TOTAL 35883.10 MEAN 98.3 MAX 280 MIN .00 AC-FT 71170
WTR YR 1980 TOTAL 41355.00 MEAN 113 MAX 289 MIN .00 AC-FT 82030

08188750 GUADALUPE-BLANCO RIVER AUTHORITY CALHOUN CANAL FLUME NO. 2 NEAR LONG MOTT, TX

LOCATION.--Lat 28°30'09", long 96°45'40", Calhoun County, Hydrologic Unit 12100204, on left bank at concrete Parshall flume No. 2, 3,700 ft (1,130 m) downstream from State Highway 185, 4,200 ft (1,280 m) downstream from streamflow station 08188600, and 1.4 mi (2.3 km) north of Long Mott.

PERIOD OF RECORD.--October 1971 to June 1972 (monthly discharge only), July 1972 to current year.

GAGE.--Deflection-vane recorder, water-stage recorder, and Parshall flume. Datum of gage is 22.37 ft (6.818 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except those for periods of low velocities, which are poor. Flow is diverted from Guadalupe River 550 ft (168 m) upstream from Guadalupe River near Tivoli (station 08188800), and then through a system of canals, Hog Bayou, and Goff Bayou, a distance of 8.9 mi (14.3 km) to the pumping station on Goff Bayou 1,900 ft (579 m) upstream from flume No. 1. Diversions to the Union Carbide Co. between flumes 1 (station 08188600) and 2 during the current year were 18,840 acre-ft (23.2 hm^3). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--9 years, 82.1 ft^3/s (2.325 m^3/s), 59,480 acre-ft/yr (73.3 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 282 ft^3/s (7.99 m^3/s) June 23, 1975; no flow at times in 1972-80.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108	43	.00	.00	.00	47	.00	166	260	250	101	231
2	121	58	.00	.00	.00	14	.00	148	240	256	107	240
3	130	31	.00	.00	.00	14	8.0	184	231	254	101	246
4	137	4.0	19	.00	.00	9.0	14	176	246	268	101	254
5	144	5.0	29	.00	.00	.00	14	130	251	274	120	252
6	144	.00	20	.00	.00	.00	24	115	260	274	122	246
7	144	.00	24	.00	.00	.00	9.0	145	260	248	98	239
8	144	.00	.00	.00	.00	.00	14	111	260	251	50	231
9	135	.00	.00	7.0	.00	.00	48	43	266	260	.00	240
10	130	.00	.00	.00	.00	23	96	35	274	260	.00	253
11	122	.00	.00	7.0	.00	43	98	29	274	245	.00	253
12	116	.00	.00	14	.00	36	86	35	274	239	.00	252
13	108	.00	.00	14	.00	22	68	65	274	231	.00	260
14	101	.00	.00	14	.00	28	43	94	274	231	.00	147
15	93	.00	.00	11	.00	43	83	94	274	231	34	191
16	69	.00	.00	14	.00	43	115	60	274	231	86	176
17	66	.00	.00	14	.00	14	166	43	262	211	86	213
18	72	.00	.00	14	.00	31	145	43	260	196	71	231
19	72	.00	.00	14	.00	63	170	14	260	171	94	241
20	72	.00	.00	14	.00	76	176	54	260	158	115	229
21	72	.00	.00	14	.00	77	144	81	260	146	123	208
22	39	.00	.00	12	.00	72	110	85	260	130	148	200
23	14	.00	.00	13	.00	81	98	106	260	107	192	188
24	14	.00	.00	43	.00	68	73	115	260	86	217	183
25	14	.00	.00	43	.00	80	72	115	260	105	224	165
26	14	.00	.00	32	.00	65	138	133	260	119	236	150
27	14	.00	.00	.00	.00	21	173	211	250	101	246	144
28	14	.00	.00	.00	.00	14	177	235	250	101	246	136
29	14	.00	.00	.00	38	7.0	158	274	250	101	246	124
30	14	.00	.00	.00	---	.00	167	266	260	85	246	98
31	14	---	.00	.00	---	.00	---	260	---	76	240	---
TOTAL	2465	141.00	92.00	294.00	38.00	991.00	2687.00	3665	7804	5896	3650.00	6221
MEAN	79.5	4.70	2.97	9.48	1.31	32.0	89.6	118	260	190	118	207
MAX	144	58	29	43	38	81	177	274	274	274	246	260
MIN	14	.00	.00	.00	.00	.00	.00	14	231	76	.00	98
AC-FT	4890	280	182	583	75	1970	5330	7270	15480	11690	7240	12340

CAL YR 1979 TOTAL 27440.70 MEAN 75.2 MAX 263 MIN .00 AC-FT 54430
WTR YR 1980 TOTAL 33944.00 MEAN 92.7 MAX 274 MIN .00 AC-FT 67330

08188800 GUADALUPE RIVER NEAR TIVOLI, TX

LOCATION.--Lat 28°30'20", long 96°53'04", Calhoun-Refugio County line, Hydrologic Unit 12100204, on right bank at diversion and saltwater barrier, one orifice located upstream and one downstream, 550 ft (168 m) downstream from Calhoun County Irrigation Canal intake, 0.4 mi (0.6 km) downstream from San Antonio River, 3.5 mi (5.6 km) north of Tivoli, and at mile 10.2 (16.4 km). Water-quality sampling site on left bank 474 ft (144 m) upstream.

DRAINAGE AREA.--10,128 mi² (26,232 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1965 to current year.

REVISED RECORDS.--WRD TX-68-1: Drainage area.

GAGE.--Duplex water-stage recorder. Datum of gage is 0.04 ft (0.012 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Many small diversions above station. Some regulation by powerplants. Upstream regulation same as that for Guadalupe River at Cuero (station 08175800) and San Antonio River at Goliad (station 08188500).

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height (upstream from barrier), 13.7 ft (4.18 m) Sept. 22, 1967; minimum, 1.5 ft (0.46 m) Mar. 16, 1967. Maximum gage height (downstream from barrier), 13.6 ft (4.15 m) Sept. 22, 1967; minimum, 0.5 ft (0.15 m) July 12, 14, 1967.

Maximum stage since at least 1936, that of Sept. 22, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1936 reached a stage of 11 ft (3.4 m), present site and datum. Levees along the Navigation Canal from San Antonio Bay to Victoria were built in 1961 and decreased the flood plain materially.

EXTREMES FOR CURRENT YEAR.--Maximum gage height (upstream from barrier), 8.2 ft (2.50 m) May 19-25, Sept. 12-13; minimum, 2.6 ft (0.79 m) Apr. 15. Maximum gage height (downstream from barrier), 8.1 ft (2.47 m) May 19-25, Sept. 11-13; minimum, 1.3 ft (0.40 m) July 17.

MAXIMUM DAILY GAGE HEIGHT, IN FEET, UPSTREAM AND DOWNSTREAM FROM SALTWATER BARRIER,
WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT	
	up	down	up	down	up	down	up	down	up	down	up	down	up	down	up	down	up	down	up	down	up	down	up	down
1	6.1	6.1	4.4	4.3	4.0	3.9	4.6	4.5	5.3	5.2	3.6	3.5	4.1	4.1	4.4	3.5	7.2	7.0	4.6	2.4	4.1	1.6	4.4	2.2
2	5.9	5.8	4.2	4.1	3.9	3.8	5.5	5.4	5.0	4.8	3.3	3.2	4.3	4.3	4.1	2.9	7.2	7.0	4.6	2.4	4.3	2.0	4.4	2.2
3	5.6	5.5	4.2	4.1	3.6	3.5	5.6	5.5	4.8	4.7	3.1	3.0	4.3	4.3	4.1	2.7	7.1	6.7	4.6	2.4	4.4	2.1	4.3	2.0
4	5.3	5.2	4.2	4.1	3.5	3.3	5.4	5.3	4.7	4.6	3.1	3.1	4.1	4.1	4.0	2.5	6.4	6.3	4.6	2.1	4.4	2.3	4.2	2.3
5	5.0	4.9	4.2	4.1	3.5	3.4	4.9	4.8	4.5	4.4	3.2	3.2	3.9	3.8	4.0	2.6	6.2	6.0	4.4	1.9	4.4	2.3	3.9	2.4
6	4.8	4.7	4.1	4.0	3.5	3.4	4.4	4.4	4.5	4.4	3.1	3.1	4.0	4.0	4.4	3.6	5.9	5.8	4.4	1.9	4.2	2.3	3.9	2.6
7	4.6	4.5	3.9	3.7	3.7	3.5	4.2	4.2	4.7	4.6	3.2	3.0	4.0	3.9	4.5	3.8	5.7	5.6	4.5	1.9	4.2	2.3	3.9	2.8
8	4.3	4.2	3.9	3.8	3.7	3.6	4.1	3.9	4.8	4.7	3.2	3.0	4.0	3.9	4.6	3.2	5.5	5.4	4.5	1.9	4.2	2.8	4.1	3.1
9	4.0	3.9	4.1	4.0	3.8	3.7	4.0	3.8	4.9	4.8	3.2	3.0	3.4	3.3	4.6	3.8	5.1	5.0	4.5	1.9	4.8	3.9	6.9	6.7
10	3.6	3.6	3.8	3.7	4.0	3.8	4.1	3.8	5.6	5.5	3.2	3.1	3.5	3.4	4.6	3.8	4.3	4.1	4.4	1.8	6.3	6.2	7.8	7.7
11	3.4	3.4	3.7	3.6	4.0	3.8	4.1	3.9	5.6	5.5	3.2	3.0	3.6	3.5	4.6	3.7	4.1	4.0	4.3	1.8	6.3	6.2	8.1	8.1
12	3.4	3.4	3.6	3.5	4.0	3.9	4.0	3.7	5.5	5.4	3.2	3.1	3.5	3.4	4.6	3.6	4.0	3.9	4.3	1.8	6.8	6.8	8.2	8.1
13	3.4	3.3	3.5	3.4	4.0	3.8	4.0	3.7	5.4	5.4	3.1	3.0	2.8	2.7	4.7	3.7	4.0	3.8	4.2	1.8	7.4	7.4	8.2	8.1
14	3.5	3.4	3.5	3.4	4.5	4.4	4.2	3.9	5.3	5.3	3.5	3.4	2.7	2.6	4.8	3.8	4.0	3.8	4.3	1.7	7.9	7.7	7.9	7.9
15	3.7	3.6	3.5	3.4	4.5	4.4	4.2	4.0	5.2	5.2	3.5	3.4	2.6	2.5	4.8	4.1	4.0	3.9	4.3	1.6	8.0	7.8	7.3	7.2
16	3.7	3.6	3.5	3.4	4.4	4.4	4.2	4.0	4.9	4.9	3.2	3.2	4.5	2.4	4.8	3.9	4.1	3.9	4.3	1.5	8.0	7.8	6.3	6.2
17	3.7	3.6	3.3	3.2	4.3	4.2	4.1	3.9	4.5	4.5	3.2	3.2	4.5	3.2	7.3	7.2	3.9	3.7	4.1	1.3	7.9	7.5	5.6	5.5
18	3.7	3.6	3.5	3.2	3.9	3.9	4.0	3.8	4.0	4.4	3.4	3.3	3.9	2.9	7.6	7.5	3.9	3.6	4.1	1.5	7.3	6.2	5.1	5.0
19	4.0	3.8	3.8	3.7	3.9	3.8	4.2	4.1	4.2	4.1	3.5	3.4	4.0	2.6	8.2	8.1	3.9	3.4	4.1	1.8	4.9	4.5	4.8	4.7
20	4.1	3.9	3.9	3.8	3.9	3.8	4.5	4.4	4.2	4.1	3.8	3.7	4.4	2.7	8.2	8.1	3.9	3.4	4.1	2.0	3.8	3.7	4.5	4.4
21	4.1	4.0	3.8	3.7	3.9	3.8	7.5	7.2	4.4	4.3	3.5	3.4	4.4	2.7	8.2	8.1	3.9	3.3	4.1	1.9	3.4	3.1	4.6	4.4
22	4.1	4.0	3.7	3.6	4.0	3.8	7.9	7.7	4.4	4.3	3.2	3.2	4.2	2.7	8.2	8.1	3.9	3.0	4.1	2.3	4.2	2.1	4.4	4.2
23	3.9	3.8	3.8	3.7	4.0	3.8	7.9	7.7	4.4	4.3	3.3	3.2	4.1	3.1	8.2	8.1	4.4	3.0	4.1	1.9	4.2	2.0	4.0	3.9
24	3.9	3.8	3.9	3.8	3.7	3.6	7.8	7.6	4.4	4.3	3.2	3.1	4.0	3.2	8.2	8.1	4.8	2.9	4.2	2.0	4.2	2.0	4.0	3.9
25	4.0	3.9	4.0	3.9	3.8	3.6	7.4	7.3	3.9	3.8	4.1	3.2	4.0	3.5	8.2	8.1	4.8	3.1	4.2	2.2	4.2	1.9	4.1	4.0
26	4.0	3.9	4.0	3.9	3.8	3.6	7.2	7.1	3.7	3.6	3.6	3.5	3.9	3.0	8.1	8.0	4.8	3.0	4.2	2.3	4.2	1.9	4.7	4.5
27	4.0	3.9	4.1	3.9	3.9	3.8	7.1	6.9	3.9	3.8	3.9	3.8	3.8	2.5	7.9	7.8	4.8	2.8	4.2	2.2	4.3	2.2	5.9	5.7
28	3.9	3.8	4.0	3.9	4.0	3.9	6.8	6.7	3.9	3.8	3.9	3.8	3.7	2.5	7.7	7.6	4.7	2.7	4.2	2.2	4.4	2.1	6.2	6.0
29	4.1	4.0	3.8	3.7	4.6	4.5	6.5	6.3	3.8	3.7	3.9	3.8	4.3	2.5	7.5	7.4	4.6	2.5	4.2	2.0	4.4	2.1	6.0	5.9
30	4.7	4.6	4.0	3.8	4.6	4.6	6.1	5.9	---	---	3.9	3.8	4.5	3.3	7.3	7.1	4.6	2.5	4.2	1.8	4.4	2.2	7.4	7.2
31	4.4	4.3	---	---	4.5	4.5	5.8	5.6	---	---	3.9	3.8	---	---	7.2	7.0	---	---	4.1	1.8	4.4	2.8	---	---

08188800 GUADALUPE RIVER NEAR TIVOLI, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1965 to current year. Chemical and biochemical analyses: October 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1965 to current year.
WATER TEMPERATURES: October 1965 to current year.

INSTRUMENTATION.--Specific conductance is recorded continuously at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,000 micromhos June 1, 1971, Aug. 3, 1978; minimum daily, 159 micromhos Apr. 28, 1980.
WATER TEMPERATURES (1966-69): Maximum daily, 32.0°C on several days during June, July, and August 1967-69; minimum daily, 8.0°C Jan. 15, 1968.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 997 micromhos Sept. 9; minimum daily, 159 micromhos Apr. 28.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)
NOV 07...	1052	822	8.2	19.0	5	18	8.7	92	2.8	280	44
JAN 15...	1105	849	8.2	15.0	10	26	9.6	94	1.8	300	63
MAR 11...	1205	865	8.2	20.0	5	21	8.4	91	1.8	310	72
MAY 07...	1607	884	7.9	25.5	5	52	6.8	82	1.7	290	67
AUG 05...	1455	880	8.1	30.0	5	36	5.9	78	1.4	270	49
SEP 16...	1510	407	7.5	29.5	45	70	6.8	89	1.8	130	18

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
NOV 07...	83	18	56	1.5	3.6	290	0	61	83	.3	15
JAN 15...	89	19	64	1.6	3.7	290	0	70	99	.3	14
MAR 11...	91	20	72	1.8	3.6	290	0	66	100	.3	12
MAY 07...	84	19	69	1.8	4.6	270	0	82	91	.4	14
AUG 05...	77	19	70	1.9	4.7	270	0	69	110	.4	17
SEP 16...	42	6.8	27	1.0	5.5	140	0	32	36	.2	12

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
NOV 07...	463	51	16	2.7	.040	2.7	.100	.55	.65	.740	6.9
JAN 15...	502	65	13	.87	.040	.91	.050	1.2	1.2	.680	4.8
MAR 11...	508	40	14	1.6	.020	1.6	.060	.44	.50	.410	7.0
MAY 07...	497	163	10	1.9	.020	1.9	.040	.83	.87	.330	7.5
AUG 05...	500	80	43	.71	.040	.75	.020	.85	.87	.570	8.8
SEP 16...	231	166	11	.83	.030	.86	.020	.98	1.0	.380	15

08188800 GUADALUPE RIVER NEAR TIVOLI, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
NOV 07...	1052	2	100	1	0	0	<10
JAN 15...	1105	2	100	<1	0	0	<10
MAY 07...	1607	3	100	<1	0	1	<10
AUG 05...	1455	5	100	2	0	3	<10

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV 07...	0	2	.0	0	0	5
JAN 15...	1	4	.2	1	0	3
MAY 07...	0	1	.1	1	0	<3
AUG 05...	30	7	.3	1	0	6

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	CHLOR-DANE, TOTAL (UG/L)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
JAN 15...	1105	.0	0	.00	.00	.0	.0	0	.00	.1
AUG 05...	1455	.0	9	.00	.00	.0	.0	10	.00	.9

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
JAN 15...	.00	.0	.00	.0	.00	.00	.0	.00	.00	.0
AUG 05...	.00	1.9	.00	.0	.03	.00	.2	.00	.00	.0

DATE	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)
JAN 15...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0
AUG 05...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 15...	.00	.00	.00	.00	0	0	.00	.01	.00	.00
AUG 05...	.00	.00	.00	.00	0	0	.00	.00	.00	.00

08188800 GUADALUPE RIVER NEAR TIVOLI, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	735	722	729	813	794	805	808	791	803	772	759	766
2	753	719	746	800	748	784	791	780	787	864	769	811
3	764	747	756	802	797	799	805	789	796	858	775	829
4	778	761	771	822	800	810	811	789	801	775	759	765
5	786	759	771	830	822	826	813	802	807	769	707	731
6	791	764	778	837	830	834	808	797	802	746	717	731
7	800	772	789	838	816	827	813	794	803	783	760	772
8	833	794	817	826	802	814	819	797	808	808	746	781
9	836	784	810	806	795	800	822	802	812	811	800	807
10	854	773	814	819	802	813	820	802	810	816	802	812
11	850	798	824	813	802	810	819	802	811	845	822	834
12	852	806	830	815	806	810	819	797	808	883	827	861
13	848	802	825	824	800	812	811	794	802	874	833	844
14	852	808	830	839	824	831	815	772	794	843	808	833
15	873	813	843	843	830	834	775	719	769	846	830	837
16	856	796	826	847	840	842	789	772	776	842	824	833
17	844	810	827	843	824	834	824	794	809	834	808	824
18	856	813	834	833	824	828	858	824	839	839	808	824
19	858	813	836	833	819	826	858	822	843	836	813	824
20	859	811	835	836	822	829	822	791	806	827	797	812
21	861	816	839	822	814	818	798	780	786	797	414	623
22	865	816	840	822	805	817	805	780	793	580	367	531
23	867	819	843	824	805	815	808	783	798	462	412	437
24	846	824	835	824	811	818	827	802	814	545	424	483
25	839	805	823	833	815	824	830	813	822	641	548	596
26	819	805	812	849	822	827	827	797	815	691	643	668
27	833	813	824	855	827	840	822	791	805	696	674	685
28	833	824	828	843	805	822	827	805	813	684	660	669
29	839	830	834	805	783	790	822	802	812	660	645	649
30	839	827	835	811	789	800	836	767	802	677	649	663
31	827	813	817	---	---	---	767	707	747	718	677	698
MONTH	873	719	814	855	748	818	858	707	803	883	367	737

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	756	696	725	855	849	851	899	849	861	942	628	844
2	797	761	782	855	830	845	911	889	900	855	624	777
3	813	800	807	850	824	837	889	805	832	800	651	758
4	852	816	835	850	827	838	822	802	815	822	637	759
5	867	845	856	857	832	844	836	816	822	839	651	745
6	863	853	858	861	846	850	816	783	800	877	670	766
7	865	852	858	880	855	866	816	769	794	916	867	890
8	875	869	872	861	827	852	874	808	838	870	797	831
9	869	833	851	867	849	857	883	861	869	805	764	788
10	833	772	800	874	836	862	896	861	878	791	605	712
11	775	645	712	883	867	875	877	843	858	712	605	673
12	769	732	755	886	836	861	880	836	859	748	707	728
13	746	677	717	902	863	882	870	861	867	883	751	796
14	780	677	723	880	839	860	883	855	870	896	849	871
15	830	786	816	877	839	858	880	811	854	861	775	802
16	864	830	845	912	877	890	877	839	860	791	756	774
17	880	861	872	902	880	891	883	839	863	772	657	751
18	880	865	872	883	861	872	878	476	742	717	459	578
19	993	944	968	874	819	852	864	339	648	497	416	456
20	944	929	936	852	802	827	855	624	738	444	423	432
21	929	873	901	912	855	885	887	604	808	435	410	421
22	883	864	874	923	874	898	880	833	861	438	325	372
23	864	831	848	933	843	888	883	839	865	367	343	348
24	856	820	838	879	851	865	880	833	861	391	370	382
25	883	843	864	877	846	862	864	824	842	408	381	395
26	878	827	856	---	---	874	861	468	795	462	409	434
27	870	835	852	---	---	882	855	322	611	482	424	457
28	846	826	836	---	---	890	772	159	563	444	423	432
29	852	822	837	---	---	881	---	---	864	485	446	466
30	---	---	---	---	---	860	906	578	796	527	484	507
31	---	---	---	---	---	---	---	---	---	559	528	544
MONTH	993	645	833	933	802	865	911	159	814	942	325	629

08188800 GUADALUPE RIVER NEAR TIVOLI, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	601	563	583	791	712	752	880	819	850	860	821	840
2	626	601	619	783	767	775	879	844	862	861	830	850
3	624	602	613	805	769	787	898	837	868	874	822	852
4	639	624	633	805	791	798	897	837	867	880	816	848
5	662	637	650	849	775	812	886	839	862	877	822	854
6	684	662	673	822	764	793	899	827	867	849	780	816
7	700	684	694	783	724	754	899	852	877	816	740	782
8	712	703	708	769	714	742	889	816	852	759	688	733
9	732	710	722	760	717	738	861	794	826	997	486	823
10	751	724	740	751	722	736	919	778	832	434	324	357
11	759	712	746	775	730	752	756	578	646	350	---	---
12	746	730	739	780	740	760	864	399	563	---	---	---
13	753	740	748	756	722	739	811	425	473	---	---	---
14	756	714	739	800	751	776	451	417	427	---	---	---
15	764	730	748	789	748	768	561	417	467	---	---	---
16	772	745	760	791	772	782	460	423	437	420	410	415
17	772	735	759	819	797	808	497	462	481	444	419	429
18	797	627	712	830	805	818	519	492	507	478	444	462
19	789	740	764	843	780	821	525	498	513	537	484	510
20	783	719	751	849	794	828	595	527	565	585	537	563
21	---	---	---	836	813	827	643	593	616	639	585	615
22	---	---	---	858	805	832	674	622	652	649	619	634
23	---	---	---	849	808	824	717	647	690	668	649	658
24	---	---	---	846	813	829	746	714	735	696	668	680
25	---	---	---	861	811	839	791	738	765	700	691	697
26	---	---	---	855	819	839	800	780	786	714	698	709
27	---	---	---	860	823	842	805	791	801	732	707	720
28	---	---	---	862	828	845	827	797	812	732	599	639
29	---	---	---	863	827	845	822	800	812	649	627	638
30	---	---	---	874	832	853	813	789	803	635	616	631
31	---	---	---	901	843	872	839	797	818	---	---	---
MONTH	797	563	705	901	712	800	919	399	707	997	324	670

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.0	21.0	---	---	11.0	---	21.5	25.0	---	33.0	32.0	31.0
2	27.0	19.0	---	13.5	---	---	20.5	24.0	30.0	33.0	---	---
3	27.0	---	12.0	14.0	---	13.0	22.0	---	30.0	33.0	---	31.0
4	26.0	---	13.0	13.0	11.0	13.5	---	---	30.0	---	32.0	32.0
5	25.5	19.0	13.0	---	12.0	14.0	---	27.0	30.0	---	31.0	32.0
6	---	19.0	14.5	---	14.0	16.0	---	27.0	31.0	---	32.0	---
7	---	18.0	14.0	13.5	15.0	16.5	23.0	26.0	---	33.0	31.0	---
8	26.0	19.0	---	13.5	14.0	---	23.0	27.0	---	32.0	32.0	31.0
9	26.0	19.0	---	---	---	---	23.5	26.0	31.0	33.0	---	29.5
10	25.0	---	14.5	13.5	---	19.0	22.5	---	31.0	33.0	---	30.0
11	24.0	---	16.0	14.5	---	19.0	24.0	---	31.0	32.5	27.0	29.0
12	24.5	17.0	16.0	---	10.0	20.5	---	27.0	31.0	---	28.0	29.0
13	---	18.0	15.0	---	10.0	20.0	---	26.0	32.0	---	27.0	---
14	---	17.0	14.5	14.5	11.5	19.0	20.0	27.0	---	33.0	29.0	---
15	25.5	17.0	---	16.0	12.5	---	21.0	27.0	---	33.0	28.0	28.5
16	26.0	17.0	---	16.5	---	---	20.5	26.0	31.0	33.0	---	30.0
17	26.0	---	12.0	17.5	---	19.5	23.0	---	30.5	33.0	---	32.0
18	26.0	---	11.0	17.0	10.5	18.0	22.0	---	31.0	33.0	30.0	30.0
19	26.5	19.0	11.5	---	12.5	18.5	---	25.5	32.0	---	30.0	30.0
20	---	19.0	12.5	---	12.5	19.0	---	26.5	31.0	---	30.0	---
21	---	23.0	13.0	18.5	14.0	18.0	23.5	26.5	---	32.0	31.0	---
22	25.0	17.5	---	17.0	15.0	---	23.5	27.0	---	33.0	31.0	30.0
23	24.0	---	---	16.0	---	---	24.0	29.0	31.0	31.5	---	30.0
24	23.0	---	---	14.5	---	19.0	24.5	---	32.0	33.0	---	30.0
25	22.5	---	---	14.0	17.0	19.5	24.0	---	32.0	32.0	32.5	30.0
26	21.5	16.0	14.5	---	16.0	19.0	---	---	33.0	---	31.5	29.0
27	---	16.0	15.0	---	16.0	19.0	---	29.5	32.0	---	31.5	---
28	---	15.0	15.5	13.5	16.0	19.0	---	28.5	---	31.5	32.0	---
29	25.0	15.0	---	14.0	17.0	---	24.0	29.0	---	32.0	31.0	30.0
30	24.0	13.0	---	14.0	---	18.0	23.0	29.0	33.0	32.0	---	28.0
31	21.5	---	14.5	13.5	---	---	---	---	---	32.0	---	---
MEAN	25.0	18.0	14.0	15.0	13.5	18.0	22.5	27.0	31.0	32.5	30.5	30.0

08189200 COPANO CREEK NEAR REFUGIO, TX

LOCATION.--Lat 28°18'12", long 97°06'46", Refugio County, Hydrologic Unit 12100405, on right bank at bridge on Farm Road 774, 3.6 mi (5.8 km) upstream from Alameda Creek, 8.1 mi (13.0 km) east of Refugio, and 11.9 mi (19.1 km) upstream from mouth.

DRAINAGE AREA.--87.8 mi^2 (227 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1970 to current year.

GAGE.--Water-stage recorder. Datum of gage is 17.25 ft (5.258 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. No known diversion above station. Recording rain gage is located at station.

AVERAGE DISCHARGE.--10 years, 47.8 ft^3/s (1.354 m^3/s), 7.39 in/yr (188 mm/yr), 34,630 acre-ft/yr (42.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,300 ft^3/s (178 m^3/s) Sept. 12, 1971, gage height, 21.00 ft (6.401 m), from rating curve extended above 3,800 ft^3/s (108 m^3/s); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1921, 22 ft (6.7 m) in September 1967, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 390 ft^3/s (11.0 m^3/s) Jan. 22 at 1000 hours, gage height, 9.65 ft (2.941 m), no peak above base of 500 ft^3/s (14.2 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	.80	.05	3.8	19	1.7	.07	.00	1.9	.00	.00	.15
2	24	.70	.04	2.6	16	1.4	.07	.00	1.1	.00	.00	.06
3	16	.61	.03	1.8	14	1.4	.07	.00	.70	.00	.00	.02
4	12	.52	.05	1.4	13	1.3	.07	.00	.70	.00	.00	.00
5	9.1	.36	.07	1.2	12	1.1	.07	.00	.55	.00	.00	.00
6	7.5	.29	.12	.94	10	.75	.07	.00	.32	.00	.00	.01
7	6.3	.23	.16	.83	9.1	.52	.07	.00	.19	.00	.00	.04
8	5.5	.19	.23	.64	8.3	.43	.07	.00	.10	.00	.00	.10
9	4.8	.13	.18	.61	8.2	.29	.07	.00	.02	.00	.00	.17
10	4.0	.13	.18	.61	8.1	.18	.07	.00	.00	.00	50	.13
11	3.5	.10	.09	.61	7.4	.10	.07	.00	.00	.00	103	.12
12	3.1	.10	.08	.55	6.7	.10	.07	.00	.00	.00	88	.07
13	2.8	.07	.52	.45	8.2	.10	.07	.00	.00	.00	67	.04
14	2.6	.07	.65	.43	9.6	.10	.07	.00	.00	.00	39	.04
15	2.4	.04	.33	.39	9.8	.10	.07	.00	.00	.00	21	.01
16	2.1	.03	.25	.40	9.0	.10	.05	.00	.00	.00	8.4	.00
17	1.9	.02	.20	.42	7.8	.10	.00	.00	.00	.00	15	.00
18	1.6	.03	.18	.38	6.6	.10	.00	.00	.00	.00	5.3	.00
19	1.6	.03	.18	.36	6.0	.10	.00	63	.00	.00	3.5	.00
20	1.5	.03	.18	.36	5.1	.10	.00	76	.00	.00	3.3	.00
21	1.5	.03	.18	104	4.6	.10	.00	51	.00	.00	2.8	.00
22	1.4	.03	.18	377	4.2	.10	.00	33	.00	.00	2.4	.00
23	1.3	.06	.22	365	3.6	.10	.00	21	.00	.00	2.2	.00
24	1.2	.17	.20	291	3.3	.10	.00	13	.00	.00	1.8	.00
25	1.1	.24	.18	234	2.9	.10	.00	8.7	.00	.00	1.6	.00
26	1.0	.35	.17	188	2.5	.10	.00	7.7	.00	.00	1.5	.00
27	1.0	.49	.13	149	2.3	.10	.00	7.4	.00	.00	.89	14
28	.90	.69	.14	108	2.1	.10	.00	5.5	.00	.00	.61	45
29	.90	.60	.19	73	2.1	.10	.00	4.4	.00	.00	.42	53
30	.85	.29	5.1	47	---	.10	.00	3.8	.00	.00	.32	65
31	1.0	---	6.6	28	---	.10	---	2.8	---	.00	.16	---
TOTAL	172.45	7.43	17.06	1982.78	221.5	11.17	1.10	297.30	5.58	.00	418.20	177.96
MEAN	5.56	.25	.55	64.0	7.64	.36	.037	9.59	.19	.000	13.5	5.93
MAX	48	.80	6.6	377	19	1.7	.07	76	1.9	.00	103	65
MIN	.85	.02	.03	.36	2.1	.10	.00	.00	.00	.00	.00	.00
CFSM	.06	.003	.006	.73	.09	.004	.000	.11	.002	.000	.15	.07
IN.	.07	.00	.01	.84	.09	.00	.00	.13	.00	.00	.18	.08
AC-FT	342	15	34	3930	439	22	2.2	590	11	.00	829	353

CAL YR 1979 TOTAL 19368.90 MEAN 53.1 MAX 1070 MIN .00 CFSM .61 IN 8.21 AC-FT 38420
WTR YR 1980 TOTAL 3312.53 MEAN 9.05 MAX 377 MIN .00 CFSM .10 IN 1.40 AC-FT 6570

08189200 COPANO CREEK NEAR REFUGIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: June 1970 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)
NOV 07...	1416	.28	900	6.2	20.5	58	6.4	70	3.5	99	9
DEC 18...	1523	.19	1500	8.1	15.0	32	9.4	91	<2.0	180	62
JAN 29...	1545	71	179	8.0	13.0	72	9.4	87	2.3	35	0
MAR 11...	1128	.10	808	7.8	21.0	150	3.6	40	3.5	120	0
APR 22...	--	.00	--	--	--	--	--		--	--	--
JUN 03...	1412	.67	354	7.4	29.0	110	5.2		4.8	59	0
JUL 15...	--	.00	--	--	--	--	--	--	--	--	--
AUG 26...	1847	1.4	295	7.6	31.5	15	7.4	99	4.8	5	0

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
NOV 07...	30	5.8	150	6.6	9.2	110	0	120	160	.2	17
DEC 18...	56	9.0	230	7.5	13	140	0	150	310	.2	10
JAN 29...	10	2.3	15	1.1	7.7	50	0	12	16	.0	12
MAR 11...	39	6.3	130	5.1	10	170	0	68	140	.2	13
APR 22...	--	--	--	--	--	--	--	--	--	--	--
JUN 03...	18	3.3	48	2.7	6.8	86	0	25	49	.2	31
JUL 15...	--	--	--	--	--	--	--	--	--	--	--
AUG 26...	17	3.2	35	2.0	8.1	84	0	17	36	.2	31

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
NOV 07...	547	71	.03	.01	.04	.04	1.8	1.8	.130	23
DEC 18...	847	10	.03	.00	.03	.02	1.3	1.3	.040	14
JAN 29...	100	20	.26	.01	.27	.04	.64	.68	.060	23
MAR 11...	490	44	.00	.01	.01	.08	1.7	1.8	.140	25
APR 22...	--	--	--	--	--	--	--	--	--	--
JUN 03...	224	40	.02	.01	.03	.10	2.6	2.7	.310	46
JUL 15...	--	--	--	--	--	--	--	--	--	--
AUG 26...	189	33	.00	.01	.00	.41	1.9	2.3	.170	20

08189200 COPANO CREEK NEAR REFUGIO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
NOV							
07...	1416	2	300	1	0	1	110
JAN							
29...	1545	1	70	<1	0	1	200

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L S MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV						
07...		20	.1	0	0	9
JAN						
29...	0	4		0	0	30

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	CHLOR-DANE, TOTAL (UG/L)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
JAN										
29...	1545	.0	2	.00	.00	.0	.0	0	.00	.0

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
JAN										
29...	.00	.0	.00	.0	.00	.00	.0	.00	.00	.0

DATE	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)
JAN										
29...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN										
29...	.00	.00	.00	.00	0	0	.00	.00	.00	.00

08189500 MISSION RIVER AT REFUGIO, TX

LOCATION.--Lat 28°17'30", long 97°16'44", Refugio County, Hydrologic Unit 12100406, on left bank at upstream side of upstream bridge of two bridges on U.S. Highway 77, 560 ft (171 m) upstream from Missouri Pacific Railroad Co. bridge, and 0.2 mi (0.3 km) southwest of Refugio.

DRAINAGE AREA.--690 mi^2 (1,787 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1939 to current year.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1.00 ft (0.305 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 25, 1958, nonrecording gage at site 59 ft (18 m) downstream at same datum. Nov. 26, 1958, to Apr. 18, 1963, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records good. Several small diversions above station.

AVERAGE DISCHARGE.--41 years (water years 1940-80), 115 ft^3/s (3.257 m^3/s), 2.26 in/yr (57 mm/yr), 83,320 acre-ft/yr (103 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 79,000 ft^3/s (2,240 m^3/s) Sept. 12, 1971, gage height, 38.25 ft (11.659 m); minimum observed, 0.7 ft^3/s (0.02 m^3/s) Oct. 7, 9, 1940, Aug. 18-20, Sept. 5, 1945, Dec 29, 31, 1949, Jan. 1, 1950, July 13, Aug. 28, 1963, July 18, 19, 22-26, 31, Aug. 1, 2, 1971.

Maximum stage since about 1899, that of Sept. 12, 1971. Flood of Sept. 21, 1967, reached a stage of 36.5 ft (11.13 m), discharge 60,200 ft^3/s (1,700 m^3/s). Flood of July 7, 1942, reached a stage of 33.3 ft (10.15 m), discharge 41,700 ft^3/s (1,180 m^3/s). Flood of May 13, 1972, reached a stage of 28.25 ft (8.611 m).

EXTREMES OUTSIDE PERIOD OF RECORD.-Floods in August 1914 and May 17, 1938, reached a stage of 32.3 ft (9.85 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft^3/s (85.0 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Jan. 22	1600	4,570	129	23.15	7.056
Aug. 12	0700	*10,200	289	28.11	8.568

Minimum discharge, 4.7 ft^3/s (0.133 m^3/s) Aug. 5-7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	29	18	18	51	24	18	14	22	8.3	5.2	47
2	57	26	18	16	46	24	18	15	22	8.3	5.2	45
3	53	25	18	15	52	23	19	15	20	7.8	5.0	46
4	49	24	18	14	44	23	19	15	19	7.9	5.0	45
5	46	24	18	14	52	24	18	15	18	7.6	5.0	43
6	44	24	18	14	54	23	18	14	17	7.6	4.7	48
7	42	24	18	14	44	23	18	14	17	7.2	4.7	49
8	41	23	18	14	41	23	18	18	16	7.7	5.2	55
9	39	23	17	14	83	23	18	19	17	6.8	14	49
10	37	23	17	14	136	23	17	21	18	6.8	1210	45
11	35	22	17	14	75	23	17	19	16	6.5	5540	43
12	34	22	17	14	54	22	17	19	15	6.2	9240	42
13	34	22	17	13	51	20	18	17	15	5.8	4060	41
14	32	21	17	13	74	20	18	16	14	5.8	893	40
15	31	21	17	13	61	20	18	16	14	6.1	327	39
16	31	21	15	13	49	20	17	88	14	7.1	185	39
17	30	21	13	14	41	23	17	760	13	7.3	143	39
18	29	21	13	15	36	21	17	375	13	7.1	124	38
19	29	21	14	15	35	22	16	217	12	7.1	100	37
20	29	21	16	14	34	23	16	630	12	6.8	83	37
21	28	22	15	1170	33	21	16	281	11	6.7	71	37
22	27	21	15	4230	31	20	16	177	11	28	63	36
23	26	22	15	2180	30	20	15	127	11	13	59	36
24	25	21	14	416	29	20	15	73	11	7.7	56	36
25	25	20	15	204	27	20	16	51	9.8	7.2	53	36
26	25	20	14	141	26	21	15	42	9.8	7.4	52	82
27	25	20	14	109	25	24	15	35	9.5	7.5	50	330
28	25	19	14	90	25	24	14	31	9.3	7.0	49	416
29	25	19	21	78	24	22	14	28	9.0	6.2	54	324
30	27	18	30	67	---	20	14	26	8.7	5.6	49	600
31	27	---	22	58	---	18	---	24	---	5.5	48	---
TOTAL	1069	660	523	9028	1363	677	502	3212	424.1	243.6	22563.0	2800
MEAN	34.5	22.0	16.9	291	47.0	21.8	16.7	104	14.1	7.86	728	93.3
MAX	62	29	30	4230	136	24	19	760	22	28	9240	600
MIN	25	18	13	13	24	18	14	14	8.7	5.5	4.7	36
CFSM	.05	.03	.02	.42	.07	.03	.02	.15	.02	.01	1.06	.14
IN.	.06	.04	.03	.49	.07	.04	.03	.17	.02	.01	1.22	.15
AC-FT	2120	1310	1040	17910	2700	1340	996	6370	841	483	44750	5550

CAL YR 1979 TOTAL 50293.5 MEAN 138 MAX 5740 MIN 4.4 CFSM .20 IN 2.71 AC-FT 99760
WTR YR 1980 TOTAL 43064.7 MEAN 118 MAX 9240 MIN 4.7 CFSM .17 IN 2.32 AC-FT 85420

08189500 MISSION RIVER AT REFUGIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: September 1961 to current year. Chemical and biochemical analyses: January 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: September 1961 to current year.
WATER TEMPERATURES: September 1961 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 100,000 micromhos Nov. 28, 1965; minimum daily, 85 micromhos Sept. 13, 1971.
WATER TEMPERATURES: Maximum daily, 37.0°C May 12, 1967; minimum daily, 0.0°C Jan. 18, 1977.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,280 micromhos Aug. 7; minimum daily, 131 micromhos Jan. 22.
WATER TEMPERATURES: Maximum daily, 33.0°C June 25, 27; minimum daily, 10.0°C Nov. 30, Feb. 10.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 03...	0916	52	2120	7.8	24.0	11	6.0	70	1.4	96	540
NOV 07...	1435	24	2200	7.8	18.5	6.0	10.1	105	2.4	320	55
DEC 10...	1507	17	2479	7.9	17.5	6.4	9.0	94	1.0	110	72
JAN 14...	1455	14	2670	7.8	16.5	7.1	9.0	--	1.5	96	250
FEB 13...	1024	48	1200	7.8	12.5	25	9.2	85	1.4	1000	520
MAR 11...	0945	22	2180	7.9	22.0	11	7.1	82	1.1	160	230
APR 07...	1510	18	2330	7.9	24.0	44	8.7	104	1.6	>120	4000
MAY 06...	1000	14	2520	7.9	23.5	12	7.4	86	1.1	52	270
JUN 10...	1240	19	1760	7.9	27.5	18	4.0	49	2.2	K3700	1700
JUL 07...	1540	8.7	3400	7.8	31.5	16	7.8	104	3.4	K60	--
AUG 05...	1430	9.4	4290	7.9	31.0	22	7.3	97	3.8	K200	77
SEP 08...	1522	52	1720	7.7	28.0	25	7.6	96	3.4	780	1200

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 03...	470	170	150	22	250	5.0	4.4	360	0	40	490
NOV 07...	490	200	150	28	320	6.3	3.8	360	0	53	600
DEC 10...	520	230	160	30	350	6.7	3.9	360	0	53	650
JAN 14...	500	220	150	30	370	7.2	4.1	340	0	63	650
FEB 13...	280	91	87	14	140	3.7	4.8	230	0	27	250
MAR 11...	460	160	140	26	280	5.7	4.0	360	0	53	490
APR 07...	460	180	140	27	290	5.9	4.0	340	0	32	480
MAY 06...	470	220	140	30	340	6.8	4.6	340	0	57	640
JUN 10...	350	130	110	19	220	5.1	4.7	270	0	35	420
JUL 07...	540	290	160	35	470	8.8	5.4	330	0	52	920
AUG 05...	650	410	190	43	640	11	6.2	320	0	51	1300
SEP 08...	380	130	120	20	210	4.7	4.7	310	0	35	400

08189500 MISSION RIVER AT REFUGIO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)
OCT 03...	.3	43	1250	1180	.14	.14	.110	.060	.45	.45
NOV 07...	.3	45	1360	1380	.07	.15	.060	.040	.62	.54
DEC 10...	.3	45	1530	1470	.03	.04	.000	.000	.43	.29
JAN 14...	.3	40	1510	1480	.05	.06	.040	.030	.14	.02
FEB 13...	.1	23	640	661	.25	.16	.060	.050	1.4	1.2
MAR 11...	.3	35	1240	1210	.08	.06	.080	.060	.61	.56
APR 07...	.1	28	1230	1170	.47	.46	.540	.360	.25	.18
MAY 06...	.4	43	1460	1410	.05	.05	.040	.020	.66	.56
JUN 10...	.3	31	1030	973	.13	.07	.020	.040	.70	.43
JUL 07...	.5	35	2030	1840	.00	.00	.000	.000	.72	.45
AUG 05...	.3	36	2490	2410	.00	.00	.010	.010	.96	.31
SEP 08...	.3	40	1040	983	.09	.04	.010	.030	.86	.65

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	CARBON, ORGANIC SUSPENDED (MG/L AS C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 03...	.56	.51	.040	.010	4.2	--	--	165	23	53
NOV 07...	.68	.58	.010	.010	--	5.8	.0	77	5.0	99
DEC 10...	.43	.29	.020	.000	6.0	--	--	99	4.5	39
JAN 14...	.18	.05	.040	.020	3.0	--	--	86	3.3	53
FEB 13...	1.5	1.2	.040	.010	--	11	.8	33	4.3	95
MAR 11...	.69	.62	.050	.020	3.8	--	--	98	5.8	61
APR 07...	.79	.54	.030	.020	7.7	--	--	53	2.6	96
MAY 06...	.70	.58	.040	.010	--	3.7	.8	77	2.9	65
JUN 10...	.72	.47	.060	.010	8.3	--	--	117	6.0	54
JUL 07...	.72	.45	.050	.030	4.6	--	--	91	2.1	97
AUG 05...	.97	.32	.060	.010	--	12	.5	--	--	--
SEP 08...	.87	.68	.080	.020	7.0	--	--	99	14	73

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUSPENDED TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)
NOV 07...	1435	7	0	7	900	0	1000	0	0	0	0
DEC 10...	1507	--	--	--	--	--	--	--	--	--	--
FEB 13...	1024	5	1	4	600	0	600	0	0	0	0
MAR 11...	0945	--	--	--	--	--	--	--	--	--	--
MAY 06...	1000	9	0	9	700	0	700	0	0	0	0
JUN 10...	1240	--	--	--	--	--	--	--	--	--	--
AUG 05...	1430	9	1	8	1000	1000	0	0	0	0	0
SEP 08...	1522	--	--	--	--	--	--	--	--	--	--

89500 MISSION RIVER AT REFUGIO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)
NOV 07...	0	0	0	0	0	0	0	0	320	290	30
DEC 10...	--	--	--	--	--	--	--	--	--	--	--
FEB 13...	0	0	0	0	1	5	3	2	630	560	70
MAR 11...	--	--	--	--	--	--	--	--	--	--	--
MAY 06...	0	0	0	0	1	4	4	0	380	360	20
JUN 10...	--	--	--	--	--	--	--	--	--	--	--
AUG 05...	0	0	0	0	0	3	3	0	610	580	30
SEP 08...	--	--	--	--	--	--	--	--	--	--	--

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI)
NOV 07...	3	3	0	180	60	120	.1	.0	.1	3	3
DEC 10...	--	--	--	--	--	--	--	--	--	--	--
FEB 13...	1	1	0	140	40	100	.3	.0	.4	0	0
MAR 11...	--	--	--	--	--	--	--	--	--	--	--
MAY 06...	10	10	0	240	120	120	.2	.0	.2	12	9
JUN 10...	--	--	--	--	--	--	--	--	--	--	--
AUG 05...	2	2	0	500	220	280	.1	.0	.1	2	2
SEP 08...	--	--	--	--	--	--	--	--	--	--	--

DATE	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV 07...	0	0	0	1	0	0	0	0	0	0
DEC 10...	--	--	--	--	0	--	--	--	--	--
FEB 13...	0	1	0	1	0	0	0	30	30	0
MAR 11...	--	--	--	--	1	--	--	--	--	--
MAY 06...	3	1	0	1	0	0	0	20	10	10
JUN 10...	--	--	--	--	0	--	--	--	--	--
AUG 05...	0	1	1	0	0	0	0	10	0	10
SEP 08...	--	--	--	--	1	--	--	--	--	--

DATE	LENGTH OF EXPO-SURE (DAYS)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS)
OCT 03...	36	2.13	2.36	.760	.000	303
NOV 07...	35	7.17	8.19	7.37	1.19	138
FEB 13...	30	.310	.310	.070	.000	.00
MAY 06...	30	10.1	11.1	5.33	.730	188

08189500 MISSION RIVER AT REFUGIO, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	NOV 6,79	NOV 7,79	MAR 11,80	MAY 6,80
TIME	0957	1435	0945	1000
TOTAL CELLS/ML	86	900	7000	5700
DIVERSITY: DIVISION	1.5	1.9	1.6	1.6
.CLASS	1.5	2.2	1.9	1.6
..ORDER	1.9	0.0	2.7	2.2
...FAMILY	1.9	0.0	2.9	2.5
....GENUS	1.9	0.0	3.1	2.7

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	*	0
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	--	-	29	3	240	3	230	4
....CHLORELLA	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	40	1	--	-
....KIRCHNERIELLA	--	-	57	6	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	*	0
....POLYEDRIOPSIS	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	45	1
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	--	-	360	6
....SCENEDESMUS	--	-	140#	16	650	9	770	13
....TETRASTRUM	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CARTERIA	--	-	14	2	81	1	--	-
....CHLAMYDOMONAS	14#	17	29	3	280	4	230	4
...VOLVOCACEAE								
....PANDORINA	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	29#	33	29	3	1300#	18	590	10
....MELOSIRA	--	-	--	-	--	-	--	-
....STEPHANODISCUS	--	-	--	-	120	2	--	-
..PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	--	-	200	3	--	-
...NAVICULACEAE								
....DIPLONEIS	--	-	14	2	--	-	--	-
....NAVICULA	--	-	14	2	40	1	45	1
...NITZSCHIACEAE								
....NITZSCHIA	14#	17	29	3	280	4	180	3
.CHRYSOPHYCEAE	--	-	86	10	--	-	--	-
..CHRYSOMONADALES								
...CHROMULINACEAE								
....CHRYSOCOCCUS	--	-	72	8	--	-	--	-
...OCHROMONADACEAE								
....OCHROMONAS	--	-	--	-	530	8	--	-
.XANTHOPHYCEAE								
..HETEROCOCCALES								
...CHLOROTHECIACEAE								
....OPHIOCYTIUM	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	200#	22	--	-	45	1
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	72	8	81	1	68	1
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	--	-	--	-
....ANACYSTIS	--	-	110	13	1300#	18	2500#	44
....COCCOCHLORIS	--	-	--	-	--	-	--	-
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	1800#	26	500	9

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08189500 MISSION RIVER AT REFUGIO, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980--Continued

DATE TIME	NOV 6,79 0957		NOV 7,79 1435		MAR 11,80 0945		MAY 6,80 1000	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
EUCLENOPHYTA (EUCLENOIDS)								
.EUCLENOPHYCEAE								
..EUCLENALES								
...EUCLENACEAE								
....EUCLENA	--	-	--	-	40	1	*	0
....TRACHELOMONAS	29#	33	--	-	--	-	68	1
PYRRHOPHYTA (FIRE ALCAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...CLENODINIACEAE								
....CLENODINIUM	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE TIME	JUN 10,80 1240	JUL 7,80 1540	AUG 5,80 1430	SEP 8,80 1522
TOTAL CELLS/ML	64000	27000	100000	30000
DIVERSITY: DIVISION	0.3	0.9	0.5	0.6
.CLASS	0.3	0.9	0.5	0.6
..ORDER	0.3	0.9	1.3	0.9
...FAMILY	0.3	1.1	1.3	1.0
....GENUS	0.5	2.1	1.9	1.5

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	*	0
...MICRACTINIACEAE								
....GOLENKINIA	*	0	*	0	--	-	--	-
....MICRACTINIUM	*	0	430	2	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	--	-	350	1	1200	1	400	1
....CHLORELLA	*	0	640	2	--	-	--	-
....CHODATELLA	*	0	*	0	--	-	*	0
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	*	0	--	-	*	0
....POLYEDRIOPSIS	*	0	--	-	--	-	--	-
....SELENASTRUM	*	0	140	1	*	0	*	0
....TETRAEDRON	--	-	280	1	*	0	*	0
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	--	-	160	1
....CRUCIGENIA	--	-	280	1	2400	2	--	-
....SCENEDESMUS	650	1	1800	7	2000	2	680	2
....TETRASTRUM	--	-	280	1	810	1	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CARTERIA	--	-	*	0	--	-	--	-
....CHLAMYDOMONAS	*	0	*	0	*	0	*	0
...VOLVOCACEAE								
....PANDORINA	--	-	--	-	--	-	320	1
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	*	0	140	1	*	0	*	0
....MELOSIRA	--	-	--	-	--	-	*	0
....STEPHANODISCUS	--	-	--	-	--	-	--	-
..PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	--	-	--	-	--	-
...NAVICULACEAE								
....DIPLONEIS	--	-	--	-	--	-	--	-
....NAVICULA	*	0	*	0	--	-	*	0
...NITZSCHIACEAE								
....NITZSCHIA	320	1	280	1	600	1	420	1
.CHRYSOPHYCEAE	--	-	--	-	--	-	--	-
..CHRYSOMONADALES								
...CHROMULINACEAE								
....CHRYSOCOCCUS	--	-	--	-	--	-	--	-
...OCHROMONADACEAE								
....OCHROMONAS	--	-	--	-	*	0	--	-
.XANTHOPHYCEAE								
..HETEROCOCCALES								
...CHLOROTHECIACEAE								
....OPHIOCYTIUM	*	0	--	-	*	0	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08189500 MISSION RIVER AT REFUGIO, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980--Continued

DATE	JUN 10,80		JUL 7,80		AUG 5,80		SEP 8,80	
TIME	1240		1540		1430		1522	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	*	0	--	-	*	0
...CRYPTOMONADACEAE								
....CRYPTOMONAS	*	0	*	0	*	0	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	59000#	94	16000#	58	15000	15	23000#	77
....ANACYSTIS	1900	3	6000#	22	56000#	55	2400	8
....COCCOCHLORIS	*	0	--	-	--	-	--	-
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	22000#	21	1500	5
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	*	0	*	0	*	0	180	1
....TRACHELOMONAS	--	-	--	-	--	-	*	0
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	*	0	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	1069	2250	1250	3600	550	1590	42	120	410
NOV.	1979	660	2420	1340	2390	600	1070	43	77	430
DEC.	1979	523	2420	1340	1900	600	853	43	61	430
JAN.	1980	9028	312	173	4220	67	1630	7.4	181	69
FEB.	1980	1363	1420	787	2900	320	1190	31	113	290
MAR.	1980	677	2080	1150	2110	500	913	40	73	390
APR.	1980	502	2350	1300	1770	580	786	43	58	420
MAY	1980	3212	582	323	2800	130	1110	13	115	120
JUNE	1980	424.1	2350	1300	1490	580	667	42	48	420
JULY	1980	243.6	3100	1720	1130	840	551	44	29	460
AUG.	1980	22563.0	299	166	10100	64	3870	7.2	441	67
SEPT	1980	2800	1220	674	5100	290	2210	23	177	230
TOTAL		43064.7	**	**	39500	**	16400	**	1490	**
WTD. AVG.		118	612	340	**	140	**	13	**	120

08189500 MISSION RIVER AT REFUGIO, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1900	2090	2530	2140	1570	2050	2240	2530	1760	3130	3910	2350
2	1960	2250	2540	2230	1630	2010	2210	2490	1850	3110	4050	2450
3	2000	2380	2450	2190	1700	1960	2040	2440	1920	3190	4070	2260
4	2030	2420	2360	2370	1770	1920	2130	2430	1990	3230	4200	2370
5	2160	2380	2400	2420	1810	1990	2240	2460	1980	3220	4220	2480
6	2220	2400	2440	2470	1570	2050	2350	2490	2100	3290	4250	2190
7	2090	2420	2500	2530	1720	2110	2270	2520	2160	3310	4280	2080
8	2230	2450	2510	2550	1760	2080	2220	2500	2140	3380	4140	1700
9	2220	2370	2530	2560	1000	2090	2290	2240	2220	3430	2580	1870
10	2260	2360	2540	2620	673	2100	2260	2060	2100	3470	295	2140
11	2300	2390	2560	2530	856	2060	2400	2220	2130	3460	192	2240
12	2320	2450	2530	2560	1130	2120	2490	2250	2300	3540	178	2250
13	2330	2500	2500	2580	1230	2080	2560	2220	2340	3560	163	2450
14	2350	2500	2400	2640	1160	2140	2350	2410	2390	3580	306	2530
15	2380	2520	2440	2650	1100	2170	2260	2380	2440	3640	650	2640
16	2400	2530	2490	2620	1240	2150	2200	1950	2480	3650	1260	2690
17	2340	2550	2550	2560	1390	1930	2300	318	2520	3670	1460	2730
18	2270	2520	2660	2360	1540	1990	2340	454	2580	3760	1540	2670
19	2390	2420	2680	2550	1640	2010	2390	375	2590	3770	1740	2680
20	2360	2440	2360	2770	1690	2020	2420	162	2620	3780	1860	2720
21	2340	2450	2470	284	1780	2070	2450	282	2680	3820	1990	2710
22	2310	2390	2490	131	1820	2200	2500	323	2750	1550	2110	2720
23	2420	2330	2510	167	1880	2280	2440	476	2770	1300	2190	2740
24	2430	2380	2520	301	1890	2160	2480	548	2790	2380	2260	2820
25	2440	2430	2540	534	1900	2230	2400	703	2830	3370	2300	3020
26	2450	2500	2570	750	2010	2250	2410	1000	2850	3400	2330	2550
27	2460	2490	2600	960	2050	2140	2460	1180	2890	3450	2400	572
28	2460	2490	2620	1220	2010	1970	2500	1320	3010	3400	2430	374
29	2420	2500	2090	1400	2090	2020	2530	1460	3080	3580	2380	509
30	2370	2580	1710	1500	---	2060	2550	1560	3110	3760	2410	239
31	2350	---	2030	1620	---	2170	---	1690	---	3780	2350	---
MEAN	2290	2430	2460	1900	1570	2080	2360	1590	2450	3320	2270	2190

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		19.5	12.0	---	---	---	21.0		26.5	30.5	29.0	27.0
2		---	12.0	[illegible]	---	11.0	21.0		26.5	32.0	31.5	26.5
3		18.5	---	[illegible]	---	---	20.0		30.0	30.0	29.5	27.0
4		16.0	15.0	13.0	14.5	16.0	23.5		28.5	29.5	30.0	29.0
5		19.5	16.0	---	16.5	17.0	---		28.5	29.5	29.5	28.5
6		---	16.0	---	16.5	14.5	20.0		28.0	30.0	29.5	26.0
7		18.5	15.0	14.5	20.5	18.5	20.5		29.0	30.0	29.5	26.5
8		20.5	13.5	13.5	17.0	20.5	26.0		28.5	30.0	31.0	29.0
9		21.0	---	14.5	---	---	22.0		28.5	30.5	26.0	29.0
10		18.5	18.5	18.0	10.0	20.0	23.0		29.0	30.0	24.5	28.0
11		17.0	20.0	15.5	11.0	23.0	21.5		26.0	29.5	24.5	29.0
12		---	---	18.5	11.5	21.5	---		29.0	30.0	26.5	29.0
13		15.5	14.0	13.0	13.5	21.0	15.5		29.5	30.0	30.0	29.0
14		16.0	15.5	20.0	15.0	20.0	16.5		---	30.0	28.5	---
15		---	---	19.5	16.5	19.5	22.0		28.0	30.0	---	29.0
16		15.5	12.0	18.5	---	21.5	23.5		30.5	29.5	29.0	29.0
17		17.0	10.5	26.5	10.5	20.0	24.0		31.5	29.5	28.0	29.5
18		18.0	10.5	30.0	13.5	16.0	23.5		31.5	31.0	28.0	29.5
19		21.5	11.5	---	18.5	---	20.0		31.5	---	28.5	28.0
20		---	12.0	20.5	16.0	20.0	19.5		32.0	30.0	---	26.0
21		23.0	16.5	18.0	18.5	21.5	23.0		31.5	29.5	27.0	26.5
22		---	---	16.0	18.5	20.5	---		29.5	30.0	---	26.5
23		13.0	---	14.5	19.5	20.0	23.0		29.5	26.0	---	29.0
24		14.0	15.0	13.5	13.0	21.5	22.0		32.0	28.5	28.5	29.0
25		15.0	---	15.0	16.5	19.5	26.0		33.0	28.5	---	26.5
26		13.0	---	---	18.5	18.5	24.5		---	---	29.5	29.0
27		19.5	15.5	14.5	14.5	18.5	19.5		33.0	30.0	29.0	23.5
28		---	16.5	16.0	16.0	19.0	19.0		29.5	31.5	29.5	26.5
29		11.0	10.5	14.0	18.5	---	25.0		29.5	31.5	---	28.0
30		10.0	13.5	15.0	---	18.5	21.5		29.5	29.0	25.5	26.5
31		---	11.0	13.0	---	16.5	---		---	29.5	26.5	---
MEAN		17.0	14.0	16.5	15.5	19.0	21.5		29.5	30.0	28.5	28.0

08189700 ARANSAS RIVER NEAR SKIDMORE, TX

LOCATION.--Lat 28°16'56", long 97°37'14", Bee County, Hydrologic Unit 12100407, on right bank 160 ft (49 m) downstream from centerline of county road bridge, 3.8 mi (6.1 km) downstream from confluence of West Aransas and Poesta Creeks, and 4.4 mi (7.1 km) northeast of Skidmore.

DRAINAGE AREA.--247 mi² (640 km²).

PERIOD OF RECORD.--March 1964 to current year.
Water-quality records: Chemical analyses: October 1965 to September 1966. Sediment records: February 1966 to September 1975.

GAGE.--Water-stage recorder. Datum of gage is 72.37 ft (22.058 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. No known diversion. Chase Field Naval Air Station and city of Beeville discharge sewage effluent into the stream via Poesta Creek. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--16 years, 44.7 ft³/s (1.266 m³/s), 2.46 in/yr (62 mm/yr), 32,390 acre-ft/yr (39.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 82,800 ft³/s (2,340 m³/s) Sept. 22, 1967, gage height, 42.22 ft (12.869 m), from floodmark, from rating curve extended above 14,000 ft³/s (396 m³/s) on basis of slope-area measurements of 29,600 and 82,800 ft³/s (838 and 2,340 m³/s); no flow at times in 1964-67 and 1971.
Maximum stage since at least 1914, that of Sept. 22, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of September 1954 reached a stage of 33 ft (10.1 m), discharge 19,600 ft³/s (555 m³/s), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Jan. 21	1800	1,220	34.6	11.84	3.609
Aug. 11	0900	*6,250	177	21.92	6.681

Minimum discharge, 0.30 ft³/s (0.008 m³/s) July 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	3.8	3.8	4.4	6.8	6.1	4.5	4.9	3.6	.96	2.7	4.7
2	5.0	3.3	3.9	4.0	6.6	5.3	5.9	11	3.4	.89	1.7	5.2
3	5.1	3.2	4.0	4.1	6.5	4.8	6.7	17	3.2	.94	1.3	8.3
4	5.0	3.2	4.0	4.3	7.0	4.9	6.3	10	3.2	.95	1.0	8.5
5	4.5	3.2	3.7	4.1	6.6	5.1	5.1	6.5	3.1	.86	.77	5.9
6	4.3	3.3	3.8	4.0	6.2	5.1	4.8	5.3	2.8	.94	.87	5.2
7	4.2	3.5	3.8	3.8	6.1	5.1	4.7	4.8	2.7	.94	1.2	5.4
8	4.2	3.5	3.7	3.8	6.7	5.4	4.8	5.7	2.5	.86	1.3	6.1
9	4.2	3.9	3.7	3.7	11	5.4	4.6	7.0	2.5	.89	2.5	4.9
10	4.1	3.9	3.7	3.7	7.7	5.1	4.5	10	2.7	.89	811	4.2
11	4.0	3.6	3.7	3.8	6.6	5.1	4.4	6.5	2.7	.85	4070	4.2
12	3.8	3.3	4.3	3.8	6.5	5.3	4.6	5.5	2.7	.90	301	4.2
13	4.0	3.3	4.7	3.7	7.3	5.2	5.2	5.1	2.4	.97	67	3.8
14	4.0	3.3	6.3	3.7	8.2	4.9	4.7	5.0	2.1	.86	34	3.8
15	4.0	3.3	5.1	4.0	7.0	4.9	4.4	5.2	2.3	.69	22	3.7
16	4.0	3.4	4.2	4.2	6.3	5.0	4.4	47	2.2	.56	16	3.5
17	4.0	3.7	3.8	4.2	6.0	5.8	4.4	50	2.0	.49	13	3.5
18	4.1	4.2	3.8	4.2	5.7	5.7	4.4	16	1.8	.48	11	3.4
19	4.2	4.2	3.7	4.1	5.7	6.8	4.2	15	1.8	.46	9.8	3.2
20	4.2	4.4	3.8	4.4	5.7	5.7	4.0	36	1.8	.37	8.6	3.2
21	4.2	4.9	3.8	685	5.7	5.0	4.0	90	1.7	.35	8.3	3.4
22	4.0	6.4	4.0	217	5.7	4.9	4.1	77	1.5	.61	7.5	3.4
23	4.0	9.2	4.2	42	5.6	4.8	4.3	36	1.5	5.1	6.8	3.4
24	3.5	5.3	3.9	19	5.4	4.7	4.5	15	1.4	6.0	6.4	3.4
25	3.3	4.5	3.6	13	5.2	4.6	4.6	8.9	1.3	2.3	5.9	3.6
26	3.5	4.2	3.5	10	4.9	4.5	4.4	6.5	1.3	1.6	5.6	5.4
27	3.8	4.2	3.5	8.7	4.9	5.1	4.0	5.4	1.3	1.3	5.1	75
28	3.8	4.1	3.7	7.8	4.9	5.1	3.9	5.0	1.1	1.4	4.9	82
29	3.5	3.9	9.1	7.4	5.1	5.2	3.8	4.4	.99	5.6	5.2	29
30	3.8	3.8	13	7.1	---	5.2	4.3	4.2	1.0	4.2	4.9	39
31	4.2	---	6.0	7.0	---	4.6	---	3.9	---	4.0	4.7	---
TOTAL	127.7	122.0	139.8	1104.0	183.6	160.4	138.5	529.8	64.59	48.21	5442.04	342.5
MEAN	4.12	4.07	4.51	35.6	6.33	5.17	4.62	17.1	2.15	1.56	176	11.4
MAX	5.2	9.2	13	685	11	6.8	6.7	90	3.6	6.0	4070	82
MIN	3.3	3.2	3.5	3.7	4.9	4.5	3.8	3.9	.99	.35	.77	3.2
CFSM	.02	.02	.02	.14	.03	.02	.02	.07	.009	.006	.71	.05
IN.	.02	.02	.02	.17	.03	.02	.02	.08	.01	.01	.82	.05
AC-FT	253	242	277	2190	364	318	275	1050	128	96	10790	679

CAL YR 1979 TOTAL 6917.30 MEAN 19.0 MAX 827 MIN 2.5 CFSM .08 IN 1.04 AC-FT 13720
WTR YR 1980 TOTAL 8403.14 MEAN 23.0 MAX 4070 MIN .35 CFSM .09 IN 1.27 AC-FT 16670

08189800 CHILTIPIN CREEK AT SINTON, TX

LOCATION.--Lat 28°02'48", long 97°30'13", San Patricio County, Hydrologic Unit 12100407, on left bank at upstream end of bridge on U.S. Highway 77, 0.2 mi (0.3 km) upstream from Missouri Pacific Railroad Co. bridge, and 0.8 mi (1.3 km) northeast of Sinton.

DRAINAGE AREA.--128 mi^2 (332 km^2).

PERIOD OF RECORD.--July 1970 to current year.

REVISED RECORDS.--WRD TX-72-1: 1971(P).

GAGE.--Water-stage recorder. Datum of gage is 18.74 ft (5.712 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for periods of no gage-height record, which are fair. No known diversions above station. An undetermined amount of water from oilfield operations enters stream upstream at various points. A recording rain gage is located at station.

AVERAGE DISCHARGE.--10 years, 53.4 ft^3/s (1.512 m^3/s), 5.67 in/yr (144 mm/yr), 38,690 acre-ft/yr (47.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,300 ft^3/s (632 m^3/s) Sept. 12, 1971, gage height, 29.10 ft (8.870 m), from rating curve extended above 13,400 ft^3/s (379 m^3/s); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stages since 1910, 30.27 ft (9.226 m) Sept. 22, 1967, and 28.8 ft (8.78 m) in April 1930, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 ft^3/s (17.0 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Jan. 21	2400	4,120	117	15.50	4.724
Aug. 11	0500	*8,460	240	23.36	7.120
Sept. 27	unknown	3,200	90.6	13.5	4.11

Minimum discharge, no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.52	.15	.09	.23	.69	.11	.31	1.3	.06	.10	.00	.02
2	.36	.11	.12	.23	1.1	.16	.24	.55	.05	.07	.01	.01
3	.27	.10	.13	.23	.76	.19	.13	.09	.06	.10	.01	.18
4	.19	.10	.14	.23	.69	.14	.13	.07	.03	.11	.01	.01
5	.15	.11	.16	.23	.68	.11	.09	.07	.03	.09	.01	.01
6	.16	.12	.15	.23	.54	.19	.11	.07	.08	.09	.00	.16
7	.17	.11	.14	.23	.59	.19	.13	.06	.08	.11	57	.01
8	.16	.14	.17	.23	.83	.19	.09	1.4	.07	.07	2.9	.01
9	.16	.13	.18	.23	.44	.22	.09	.07	.53	.07	55	.01
10	.12	.10	.21	.23	.30	.26	.10	.03	.31	.10	2750	78
11	.13	.09	.21	.23	.22	.13	.11	.03	2.9	.07	7150	58
12	.16	.11	.22	.23	1.0	.11	.09	.02	.50	.10	2350	.69
13	.18	.09	.18	.23	.62	.09	.09	.07	.12	.08	357	.01
14	.17	.10	.17	.23	.44	.10	.08	.05	.03	.12	130	.00
15	.17	.10	.18	.23	.44	.09	.08	.19	.02	.08	34	.00
16	.16	.11	.17	.23	.39	.14	.11	.05	.03	.07	8.0	.00
17	.15	.14	.12	.23	.26	.15	.11	.05	.03	.05	2.9	.00
18	.16	.19	.11	.23	.22	.10	.09	.03	.03	.04	1.2	.00
19	.18	.21	.12	.23	.19	.09	.09	19	.03	.04	.59	.00
20	.19	.26	.16	.24	.16	.10	.11	4.1	.03	.06	.28	.00
21	.20	.29	.21	2420	.19	.10	.11	150	.03	.07	.14	.00
22	.15	.17	.23	1990	.16	.11	.11	512	.03	31	.09	.00
23	.14	.17	.23	108	.11	.07	.10	303	.04	.60	.05	.00
24	.14	.16	.23	54	.11	.09	.09	100	.03	.00	.04	.00
25	.16	.18	.23	22	.11	.09	.09	16	.05	.00	.06	.00
26	.17	.18	.20	9.4	.14	.20	.08	4.6	.06	.00	.03	81
27	.17	.15	.17	4.5	.16	.48	.07	1.7	.05	.00	.01	2370
28	.18	.11	.18	2.0	.14	.23	.07	.81	.05	.00	3.2	1300
29	.23	.09	.23	1.4	.09	.11	.08	.36	.09	.01	2.1	491
30	.70	.10	.23	1.3	---	.07	.09	.18	.09	.00	.30	195
31	.29	---	.23	1.0	---	.10	---	.09	---	.00	.11	---
TOTAL	6.44	4.17	5.50	4618.21	11.77	4.51	3.27	1116.04	5.54	33.30	12905.04	4574.12
MEAN	.21	.14	.18	149	.41	.15	.11	36.0	.18	1.07	416	152
MAX	.70	.29	.23	2420	1.1	.48	.31	512	2.9	31	7150	2370
MIN	.12	.09	.09	.23	.09	.07	.07	.02	.02	.00	.00	.00
CFSM	.002	.001	.001	1.16	.003	.001	.001	.28	.001	.008	3.25	1.19
IN.	.00	.00	.00	1.34	.00	.00	.00	.32	.00	.01	3.75	1.33
AC-FT	13	8.3	11	9160	23	8.9	6.5	2210	11	66	25600	9070

CAL YR 1979 TOTAL 22546.70 MEAN 61.8 MAX 2990 MIN .00 CFSM .48 IN 6.55 AC-FT 44720
WTR YR 1980 TOTAL 23287.91 MEAN 63.6 MAX 7150 MIN .00 CFSM .50 IN 6.77 AC-FT 46190

NOTE.--No gage-height record Aug. 28 to Sept. 30.

08190000 NUECES RIVER AT LAGUNA, TX

LOCATION.--Lat 29°25'42", long 99°59'49", Uvalde County, Hydrologic Unit 12110101, on right bank 0.5 mi (0.8 km) downstream from Sycamore Creek, 1.0 mi (1.6 km) northeast of Laguna, and at mile 395.4 (636.2 km).

DRAINAGE AREA.--764 mi² (1,979 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to current year.

REVISED RECORDS.--WSP 1562: 1930, 1931(M), 1932, 1939.

GAGE.--Water-stage recorder. Datum of gage is 1,119.72 ft (341.291 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 26, 1925, nonrecording gage at site 2 mi (3 km) downstream at different datum.

REMARKS.--Water-discharge records good. Many small diversions above station for irrigation.

AVERAGE DISCHARGE.--57 years, 147 ft³/s (4.163 m³/s), 2.61 in/yr (66 mm/yr), 106,500 acre-ft/yr (131 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 307,000 ft³/s (8,690 m³/s) Sept. 24, 1955, gage height, 29.95 ft (9.129 m), in gage well, 32.7 ft (9.97 m), from floodmarks, from rating curve extended above 40,000 ft³/s (1,130 m³/s) on basis of float measurement of 110,000 ft³/s (3,120 m³/s) and slope-area measurements of 213,000 and 307,000 ft³/s (6,030 and 8,690 m³/s); minimum, 2.6 ft³/s (0.074 m³/s) Mar. 14-16, 1957.
Maximum stage since at least 1866, that of Sept. 24, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1913 reached a stage of about 29 ft (8.8 m), discharge 210,000 ft³/s (5,950 m³/s); flood of Sept. 21, 1923, reached a stage of about 26.5 ft (8.08 m), discharge 160,000 ft³/s (4,530 m³/s); from information by local residents. Discharges based on rating curve mentioned above.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,000 ft³/s (28.3 m³/s) Sept. 7 at 2400 hours, gage height, 6.40 ft (1.951 m), no other peak above base of 700 ft³/s (19.8 m³/s); minimum daily, 14 ft³/s (0.40 m³/s) Aug. 28 to Sept. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	30	43	53	60	48	57	38	55	22	17	14
2	32	30	43	53	59	50	55	36	53	21	16	14
3	31	30	43	52	59	48	53	38	51	21	16	14
4	30	30	43	53	59	49	52	40	50	20	16	14
5	31	31	44	53	58	48	50	38	48	20	16	14
6	30	31	43	53	57	48	50	38	46	20	16	14
7	31	31	44	52	57	48	49	39	45	20	16	50
8	31	31	44	53	57	49	48	41	43	20	15	336
9	30	31	45	53	56	50	48	39	44	20	15	96
10	30	32	46	53	57	49	47	39	44	20	20	53
11	31	32	46	53	55	49	47	38	42	19	50	41
12	30	32	47	53	54	49	48	37	39	19	37	35
13	30	32	47	53	53	46	47	42	38	19	30	32
14	30	33	47	53	53	47	45	52	37	18	28	31
15	30	33	48	53	53	49	44	256	37	18	27	28
16	30	34	48	53	53	49	44	163	36	17	25	27
17	30	39	48	53	53	47	43	109	35	17	25	26
18	30	38	48	54	53	49	43	92	34	17	24	25
19	30	37	48	58	53	50	42	82	33	17	22	24
20	29	37	48	58	52	49	42	73	32	17	20	23
21	29	38	49	57	51	48	41	69	31	16	20	23
22	29	38	49	56	50	48	41	64	30	16	19	23
23	29	39	50	56	50	48	40	61	29	21	18	23
24	29	42	50	57	48	47	40	59	28	20	17	23
25	29	42	50	57	48	48	42	57	27	17	17	23
26	29	41	50	59	48	48	39	61	26	16	16	23
27	29	41	50	60	50	66	38	83	25	16	15	26
28	31	41	51	61	50	63	38	62	24	16	14	26
29	31	42	50	62	50	61	37	60	24	25	14	31
30	30	42	52	63	---	60	38	59	23	18	14	28
31	30	---	53	61	---	58	---	57	---	17	14	---
TOTAL	933	1060	1467	1718	1556	1566	1348	2022	1109	580	629	1160
MEAN	30.1	35.3	47.3	55.4	53.7	50.5	44.9	65.2	37.0	18.7	20.3	38.7
MAX	32	42	53	63	60	66	57	256	55	25	50	336
MIN	29	30	43	52	48	46	37	36	23	16	14	14
CFSM	.04	.05	.06	.07	.07	.07	.06	.09	.05	.02	.03	.05
IN.	.05	.05	.07	.08	.08	.08	.07	.10	.05	.03	.03	.06
AC-FT	1850	2100	2910	3410	3090	3110	2670	4010	2200	1150	1250	2300

CAL YR 1979 TOTAL 32156 MEAN 88.1 MAX 684 MIN 29 CFSM .12 IN 1.57 AC-FT 63780
WTR YR 1980 TOTAL 15148 MEAN 41.4 MAX 336 MIN 14 CFSM .05 IN .74 AC-FT 30050

08190000 NUECES RIVER AT LAGUNA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
JAN 10...	1107	51	406	8.0	15.0	0	.20	8.3	85	.5
MAY 12...	1431	39	387	8.2	26.5	0	.80	8.8	104	1.0
JUL 30...	0956	31	416	7.9	28.0	0	.70	6.9	90	1.4

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
JAN 10...	K120	32	30	190	13	56	13	8.2	.3
MAY 12...	K40	K1	K1	190	20	54	14	8.7	.3
JUL 30...	K76	30	K8	190	8	54	13	7.9	.3

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)
JAN 10...	.9	220	0	13	14	.2	11	225	7
MAY 12...	.9	210	0	20	14	.1	12	227	13
JUL 30...	1.1	220	0	12	14	.3	14	225	8

DATE	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
JAN 10...	7	.77	.02	.79	.01	.29	.30	.010	3.6
MAY 12...	7	.57	.01	.58	.04	.37	.41	.010	1.9
JUL 30...	2	.64	.01	.65	.06	.71	.77	.010	5.2

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
JAN 10...	1107	0	40	<1	0	0	<10
JUL 30...	0956	1	40	<1	0	0	<10

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN 10...	2	<1	.1	1	0	<3
JUL 30...	0	<1	.0	0	0	<3

08190000 NUECES RIVER AT LAGUNA, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JAN 10...	1107	.0	.00	.00	.0	.00	.00	.00	.00
JUL 30...	0956	.0	.00	.00	.0	.00	.00	.00	.00

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JAN 10...	.00	.00	.00	.00	.00	.00	.00	.00	.00
JUL 30...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 10...	.00	.00	.00	.00	0	.00	.00	.00	.00
JUL 30...	.00	.00	.00	.00	0	.00	.00	.00	.00

08190500 WEST NUECES RIVER NEAR BRACKETTVILLE, TX

LOCATION.--Lat 29°28'21", long 100°14'10", Kinney County, Hydrologic Unit 12110102, at Wilson Ranch on Farm Road 3199, 1.3 mi (2.1 km) upstream from Miguel Canyon, 16.0 mi (25.7 km) northeast of Brackettville, and 40.2 mi (64.7 km) upstream from mouth.

DRAINAGE AREA.--700 mi^2 (1,800 km^2).

PERIOD OF RECORD.--September 1939 to September 1950, April 1956 to current year.

REVISED RECORDS.--WSP 1312: 1949(M).

GAGE.--Water-stage recorder. Datum of gage is 1,326.79 ft (404.406 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 14, 1940, nonrecording gage at same site and datum.

REMARKS.--Records fair. In ordinary years, a large part of streamflow from basis is lost by seepage into the Balcones Fault Zone of the Edwards and associated limestones above station. No known diversion above station.

AVERAGE DISCHARGE.--35 years (water years 1940-50, 1957-80), 34.4 ft^3/s (0.974 m^3/s), 24,920 acre-ft/yr (30.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 246,000 ft^3/s (6,970 m^3/s) Sept. 20, 1964, gage height, 31.3 ft (9.54 m), from floodmark, from rating curve extended above 4,500 ft^3/s (127 m^3/s) on basis of slope-area measurements of 10,000, 51,000, 150,000, and 246,000 ft^3/s (283, 1,440, 4,250, and 6,970 m^3/s); no flow most of time.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1879, about 40 ft (12.2 m) June 14, 1935, discharge 550,000 ft^3/s (15,600 m^3/s), based on slope-area measurements of 580,000 ft^3/s (16,400 m^3/s) at site 33 mi (53 km) upstream from gage and 536,000 ft^3/s (15,200 m^3/s) at site 24 mi (39 km) downstream from gage, present site and datum, from gage-height relation of 1935 and 1955 flood peaks at site 0.6 mi (1.0 km) upstream. Flood in 1900 reached a stage of about 34 ft (10.4 m), and flood of Sept. 24, 1955, reached a stage of 27.1 ft (8.26 m), from floodmark at present site, discharge 150,000 ft^3/s (4,250 m^3/s), by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 0.64 ft^3/s (0.018 m^3/s) Aug. 14 at 0730 hours, gage height, 2.38 ft (0.725 m), no peak above base of 1,000 ft^3/s (28.3 m^3/s); no flow most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.07	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.58	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.26	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.94	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.030	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.58	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.9	.00

CAL YR 1979 TOTAL 2036.09 MEAN 5.58 MAX 1080 MIN .00 AC-FT 4040
WTR YR 1980 TOTAL 0.94 MEAN .003 MAX .58 MIN .00 AC-FT 1.9

08192000 NUECES RIVER BELOW UVALDE, TX

LOCATION.--Lat 29°07'25", long 99°53'40", Uvalde County, Hydrologic Unit 12110103, on right bank at [illegible] Ranch, 5.7 mi (9.2 km) upstream from bridge on U.S. Highway 83, 8.8 mi (14.2 km) southwest of Uvalde, 18.2 mi (29.3 km) downstream from West Nueces River, and at mile 366.0 (588.9 km).

DRAINAGE AREA.--1,947 mi² (5,043 km²).

PERIOD OF RECORD.--April 1939 to current year. October 1927 to April 1939, published as "near Uvalde"; records equivalent only during periods of floodflow.

REVISED RECORDS.--WSP 1732: 1956(M).

GAGE.--Water-stage recorder. Datum of gage is 796.12 ft (242.657 m) National Geodetic Vertical Datum of 1929. Oct. 4, 1927, to Apr. 30, 1939, water-stage recorder at site 6.2 mi (10.0 km) upstream at different datum.

REMARKS.--Records good. Part of flow of Nueces River enters Edwards and associated limestones in the Balcones Fault Zone which crosses basin downstream from Laguna (station 08190000) and upstream from this station. At low stage, most of headwater flow enters this formation. Many small diversions above station for irrigation. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--41 years, 114 ft³/s (3.228 m³/s), 82,590 acre-ft/yr (102 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 189,000 ft³/s (5,350 m³/s) Sept. 24, 1955, gage height, 24.61 ft (7.501 m), from floodmark, from rating curve extended above 34,000 ft³/s (963 m³/s) on basis of conveyance study and slope-area measurement of peak flow; no flow at times in 1951-57.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1836, 40.4 ft (12.31 m) June 14, 1935, from floodmark discharge at former site, 616,000 ft³/s (17,400 m³/s), by slope-area measurement. Large floods also occurred in 1901 and 1913, stages unknown.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 189 ft³/s (5.35 m³/s) May 15 at 0430 hours, gage height, 4.30 ft (1.311 m), no peak above base of 250 ft³/s (7.08 m³/s); minimum daily, 7.4 ft³/s (0.21 m³/s) Aug. 6, 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	23	23	22	22	19	17	16	16	12	7.4	12
2	29	23	23	22	22	19	17	16	16	12	8.3	12
3	29	22	23	22	22	20	17	17	15	11	8.1	13
4	28	22	23	23	22	19	17	24	15	9.7	7.5	13
5	28	22	23	23	22	18	17	17	15	9.8	7.7	14
6	28	22	23	23	22	18	17	16	15	9.7	7.4	14
7	29	22	23	23	22	19	17	15	15	9.2	7.4	14
8	28	23	23	23	22	18	17	16	15	9.1	7.5	13
9	28	22	23	23	21	18	16	17	15	9.5	7.6	14
10	27	22	23	23	21	18	17	16	15	9.5	12	14
11	27	22	23	22	21	19	17	16	15	9.5	22	14
12	27	22	23	22	22	18	17	15	14	9.5	14	14
13	28	22	23	22	22	17	16	16	14	9.3	12	15
14	28	21	23	22	22	18	16	26	14	8.5	11	14
15	27	21	23	22	22	18	17	61	14	8.4	11	15
16	27	21	22	22	22	18	17	32	14	8.4	11	15
17	27	26	22	23	21	17	17	23	13	8.3	10	14
18	26	25	23	23	22	18	17	18	13	8.1	10	14
19	26	23	23	23	21	18	17	17	13	8.2	10	14
20	26	23	23	23	21	17	17	16	13	8.1	11	14
21	25	23	23	23	21	17	17	15	13	8.1	11	14
22	24	23	23	22	21	17	17	15	12	8.2	11	14
23	24	23	22	22	21	17	16	15	12	8.4	11	14
24	24	24	22	22	21	16	16	15	12	8.4	11	14
25	24	24	22	22	21	17	15	15	12	8.4	11	14
26	24	23	23	22	20	18	15	15	12	8.4	11	14
27	24	23	23	22	20	18	15	46	12	8.3	11	14
28	23	23	23	22	20	18	16	23	12	7.9	12	14
29	24	23	22	23	20	16	16	18	12	7.6	12	15
30	22	23	22	23	---	16	16	17	12	7.6	12	15
31	22	---	22	22	---	17	---	16	---	7.5	13	---
TOTAL	812	681	705	696	619	551	496	620	410	276.6	328.9	418
MEAN	26.2	22.7	22.7	22.5	21.3	17.8	16.5	20.0	13.7	8.92	10.6	13.9
MAX	29	26	23	23	22	20	17	61	16	12	22	15
MIN	22	21	22	22	20	16	15	15	12	7.5	7.4	12
AC-FT	1610	1350	1400	1380	1230	1090	984	1230	813	549	652	829

CAL YR 1979 TOTAL 25698.0 MEAN 70.4 MAX 2030 MIN 21 AC-FT 50970
WTR YR 1980 TOTAL 6613.5 MEAN 18.1 MAX 61 MIN 7.4 AC-FT 13120

08193000 NUECES RIVER NEAR ASHERTON, TX

LOCATION.--Lat 28°30'00", long 99°40'54", Dimmit County, Hydrologic Unit 12110103, on right bank 28 ft (9 m) downstream from bridge on Farm Road 190, 0.1 mi (0.2 km) downstream from El Moro Creek, 5.8 mi (9.3 km) northeast of Asherton, and at mile 288.3 (463.9 km).

DRAINAGE AREA.--4,082 mi^2 (10,572 km^2).

PERIOD OF RECORD.--October 1939 to current year.

REVISED RECORDS.--WSP 1118: 1944.

GAGE.--Water-stage recorder. Datum of gage is 470.92 ft (143.536 m) National Geodetic Vertical Datum of 1929. Prior to Feb. 2, 1940, nonrecording gage at same site and datum.

REMARKS.--Records good. Part of flow of the Nueces River and its headwater tributaries enters the Edwards and associated limestones in the Balcones Fault Zone, which crosses basin between Laguna and Uvalde (stations 08190000 and 08192000, respectively). Considerable loss of flow into various permeable formations occurs downstream from the Balcones Fault Zone. Since March 1948, flow slightly regulated by Upper Nueces Reservoir, capacity 7,590 acre-ft (9.36 hm^3), 13 mi (21 km) upstream. Many small diversions above station for irrigation. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--41 years, 181 ft^3/s (5.126 m^3/s), 131,100 acre-ft/yr (162 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,500 ft^3/s (807 m^3/s) Oct. 6, 1959, gage height, 30.88 ft (9.412 m); no flow for many days each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, 33 ft (10.1 m) June 17, 1935; flood of June 30, 1913, reached about same stage, from information by local residents.

EXTREMES FOR CURRENT YEAR.-Peak discharges above base of 2,000 ft^3/s (56.6 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 16	1100	4,270	121	22.31	6.800
May 29	1400	*4,840	137	23.69	7.221

Minimum discharge, no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.22	.07	3.9	.50	.00	3.5	.93	.00	1170	.00	.00	.00
2	.44	.41	1.3	.36	.00	.66	.86	.00	293	.00	.00	.00
3	.29	.15	.18	.12	.00	.02	.38	.00	159	.00	.00	.00
4	.06	.02	.15	.03	.00	.45	.48	.00	101	.00	.00	.00
5	.03	.01	1.1	.01	.00	3.3	1.4	.00	67	.00	.00	.00
6	.17	.01	.61	.01	.00	3.6	3.3	.00	46	.00	.00	.00
7	.39	.01	.16	.01	.00	4.7	1.7	.00	33	.00	.00	.00
8	.68	.00	.02	.00	.00	1.9	2.9	3.7	23	.00	.00	.00
9	.33	.00	.01	1.0	.00	1.1	1.3	8.8	16	.00	.68	.00
10	.26	.00	.01	2.5	.00	2.0	.05	2.8	11	.00	.68	.00
11	.13	.31	.00	2.1	.79	1.0	.00	.55	7.5	.00	2.3	.00
12	.02	.34	.32	3.2	.25	1.4	.00	.09	3.9	.00	35	.00
13	.09	.41	.67	1.1	.57	1.1	.00	.01	1.8	.00	292	.00
14	.27	.71	.27	.16	1.5	3.1	.00	3.9	.86	.00	152	.00
15	.40	.69	.11	.08	1.9	5.1	.00	1060	.39	.00	108	.00
16	.45	.69	.02	.18	1.2	7.7	.00	3820	.26	.00	192	.00
17	.24	1.2	.01	.18	.83	3.4	.00	1130	.17	.00	164	.00
18	.57	1.1	.01	.17	.15	1.6	.00	82	.06	.00	91	.00
19	.48	.67	.00	.15	.02	7.4	.00	22	.01	.00	64	.00
20	.12	1.0	.00	.05	.01	9.9	.00	8.7	.01	.00	30	.00
21	.20	1.2	.00	.02	.00	8.8	.00	4.0	.01	.00	31	.00
22	.42	.81	.00	.01	.10	12	.00	1.9	.01	.00	13	.00
23	.35	1.0	.00	.01	1.0	4.4	.00	.95	.01	.00	15	.00
24	.31	1.6	.00	.00	2.1	.44	.00	.52	.00	.00	10	.00
25	.14	.65	.00	.00	.42	.06	.00	.43	.00	.00	7.4	.00
26	.15	.02	.00	.00	2.1	2.1	.00	.45	.00	.00	4.1	.00
27	.33	.22	.00	.00	3.6	1.3	.00	315	.00	.00	1.6	.00
28	.32	2.4	.00	.00	3.1	.66	.00	3070	.00	.00	.54	.00
29	.34	3.1	.01	.00	3.2	.17	.00	4760	.00	.00	.15	.00
30	.35	3.2	.18	.00	---	.39	.00	4480	.00	.00	.02	.00
31	.07	---	.40	.00	---	.85	---	3160	---	.00	.01	---
TOTAL	8.62	22.00	9.44	11.95	22.84	94.10	13.30	21935.80	1933.99	.00	1213.80	.00
MEAN	.28	.73	.30	.39	.79	3.04	.44	708	64.5	.000	39.2	.000
MAX	.68	3.2	3.9	3.2	3.6	12	3.3	4760	1170	.00	292	.00
MIN	.02	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
AC-FT	17	44	19	24	45	187	26	43510	3840	.00	2410	.00

CAL YR 1979 TOTAL 75811.49 MEAN 208 MAX 7290 MIN .00 AC-FT 150400
WTR YR 1980 TOTAL 25265.84 MEAN 69.0 MAX 4760 MIN .00 AC-FT 50110

08194000 NUECES RIVER AT COTULLA, TX

LOCATION.--Lat 28°25'34", long 99°14'23", La Salle County, Hydrologic Unit 12110105, on left bank at downstream side of bridge on U.S. Highway 81, 0.4 mi (0.6 km) upstream from Missouri Pacific Railroad Co. bridge, 0.8 mi (1.3 km) southwest of Cotulla, 1.0 mi (1.6 km) upstream from Lind Dam, and at mile 235.7 (379.2 km).

DRAINAGE AREA.--5,260 mi^2 (13,620 km^2).

PERIOD OF RECORD.--November 1923 to current year. November 1923 to September 1926 monthly discharge only, published in WSP 1312; figures of daily discharge for Oct. 31, 1923, to Sept. 30, 1926, published in WSP 588, 608, and 628, have been found to be unreliable and should not be used. Gage-height records collected in this vicinity in 1914-17 and since 1922 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1732: 1957(M). See PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 368.08 ft (112.191 m) National Geodetic Vertical Datum of 1929. Oct. 31, 1923, to Aug. 3, 1924, nonrecording gage at approximate site of present gage at datum 7.28 ft (2.219 m) higher. Aug. 4, 1924, to Nov. 19, 1934, nonrecording gage at site 5,000 ft (1,520 m) downstream at datum 8.42 ft (2.566 m) higher. Nov. 20, 1934, to July 14, 1938, water-stage recorder, and July 15, 1938, to Apr. 30, 1963, nonrecording gage, at present site and datum.

REMARKS.--Records good except those below 10 ft^3/s (0.28 m^3/s), which are poor. Part of flow of Nueces River and its headwater tributaries enter the Edwards and associated limestones in the Balcones Fault Zone, which crosses basin between Laguna and Uvalde (stations 08190000 and 08192000, respectively). Considerable loss of flow into various permeable formations occurs downstream from the Balcones Fault Zone. Low flow is slightly regulated by small storage reservoirs above station, with most diverted above station by pumping (see REMARKS for Nueces River near Asherton, station 08193000). An observation of water temperature was made during the year.

AVERAGE DISCHARGE.--56 years (water years 1925-80), 273 ft^3/s (7.731 m^3/s), 197,800 acre-ft/yr (244 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 82,600 ft^3/s (2,340 m^3/s) June 18, 1935, gage height, 32.4 ft (9.88 m), from floodmarks, from rating curve extended above 43,000 ft^3/s (1,220 m^3/s) on basis of slope-area measurement of peak flow; no flow at times each year.
Maximum stage since at least 1879, that of June 18, 1935.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 19, 1899, reached a stage of 29.7 ft (9.05 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft^3/s (70.8 m^3/s) and maximum (*):

Date	Time	Discharge		Gage height		Date	Time	Discharge		Gage height	
		(ft^3/s)	(m^3/s)	(ft)	(m)			(ft^3/s)	(m^3/s)	(ft)	(m)
May 15	1900	2,920	82.7	13.37	4.075	June 1	1200	4,270	121	14.59	4.447
May 18	1400	*5,420	153	15.49	4.721	Aug. 14	1400	2,800	79.3	13.25	4.039

Maximum discharge, no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	4200	.00	.00	10
2	.00	.00	.00	.00	.00	.00	.00	.00	3660	.00	.00	9.0
3	.00	.00	.00	.00	.00	.00	.00	.00	2400	.00	.00	7.3
4	.00	.00	.00	.00	.00	.00	.00	.00	1220	.00	.00	6.2
5	.00	.00	.00	.00	.00	.00	.00	.00	271	.00	.00	5.2
6	.00	.00	.00	.00	.00	.00	.00	.00	128	.00	.00	4.1
7	.00	.00	.00	.00	.00	.00	.00	.00	86	.00	.00	6.3
8	.00	.00	.00	.00	.00	.00	.00	.00	59	.00	.00	4.4
9	.00	.00	.00	.00	.00	.00	.00	.00	44	.00	.00	2.9
10	.00	.00	.00	.00	.00	.00	.00	.00	35	.00	11	2.2
11	.00	.00	.00	.00	.00	.00	.00	.00	27	.00	737	1.9
12	.00	.00	.00	.00	.00	.00	.00	.00	21	.00	404	1.3
13	.00	.00	.00	.00	.00	.00	.00	.00	18	.00	1090	.81
14	.00	.00	.00	.00	.00	.00	.00	58	17	.00	2590	.47
15	.00	.00	.00	.00	.00	.00	.00	1280	15	.00	2330	.26
16	.00	.00	.00	.00	.00	.00	.00	1940	13	.00	1580	.12
17	.00	.00	.00	.00	.00	.00	.00	3760	11	.00	871	.04
18	.00	.00	.00	.00	.00	.00	.00	5200	10	.00	473	.01
19	.00	.00	.00	.00	.00	.00	.00	3520	9.7	.00	283	.00
20	.00	.00	.00	.00	.00	.00	.00	1660	8.9	.00	161	.00
21	.00	.00	.00	.00	.00	.00	.00	530	7.1	.00	104	.00
22	.00	.00	.00	.00	.00	.00	.00	195	5.1	.00	70	.00
23	.00	.00	.00	.00	.00	.00	.00	116	3.0	.00	49	.00
24	.00	.00	.00	.00	.00	.00	.00	72	1.3	.00	38	.00
25	.00	.00	.00	.00	.00	.00	.00	49	.32	.00	29	.00
26	.00	.00	.00	.00	.00	.00	.00	36	.13	.00	21	.00
27	.00	.00	.00	.00	.00	.00	.00	59	.05	.00	18	.00
28	.00	.00	.00	.00	.00	.00	.00	71	.01	.00	16	.00
29	.00	.00	.00	.00	.00	.00	.00	419	.00	.00	15	.00
30	.00	.00	.00	.00	---	.00	.00	1380	.00	.00	14	.00
31	.00	---	.00	.00	---	.00	---	3620	---	.00	12	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	23965.00	12270.61	.00	10916.00	62.51
MEAN	.000	.000	.000	.000	.000	.000	.000	773	409	.000	352	2.08
MAX	.00	.00	.00	.00	.00	.00	.00	5200	4200	.00	2590	10
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	47530	24340	.00	21650	124

CAL YR 1979 TOTAL 86335.56 MEAN 237 MAX 10500 MIN .00 AC-FT 171200
WTR YR 1980 TOTAL 47214.12 MEAN 129 MAX 5200 MIN .00 AC-FT 93650

08194200 SAN CASIMIRO CREEK NEAR FREER, TX

LOCATION.--Lat 27°57'53", long 98°58'00", Webb County, Hydrologic Unit 12110105, at downstream side of bridge on Farm Road 863, 11.4 mi (18.3 km) upstream from mouth, and 22 mi (35 km) northwest of Freer.

DRAINAGE AREA.--469 mi^2 (1,215 km^2).

PERIOD OF RECORD.--January 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 298 ft (90.8 m) State Department of Highways and Public Transportation datum.

REMARKS.--Records good. An observation of water temperature was made during the year.

AVERAGE DISCHARGE.--18 years, 65.0 ft^3/s (1.841 m^3/s), 1.88 in/yr (48 mm/yr), 47,090 acre-ft/yr (58.1 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 82,000 ft^3/s (2,320 m^3/s) Oct. 17, 1971, gage height, 26.87 ft (8.190 m), from rating curve extended above 21,000 ft^3/s (595 m^3/s) on basis of flow-through-culverts, contracted-opening, and flow-over-road determination of 82,000 ft^3/s (2,320 m^3/s); no flow for many days each year.

Maximum stage since at least 1946, that of Oct. 17, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Second highest stage, 26 ft (7.9 m), discharge 65,200 ft^3/s (1,850 m^3/s), occurred in 1954, from information by State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,290 ft^3/s (206 m^3/s) Aug. 12 at 1600 hours, gage height, 21.75 ft (6.629 m), no other peak above base of 500 ft^3/s (14.2 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.80	.00	.00	29
2	.00	.00	.00	.00	.00	.00	.00	.00	.26	.00	.00	8.6
3	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	1.9
4	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.85
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.55
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.42
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.36
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.36
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.52
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	204	.36
11	.00	.00	.00	.00	.00	.00	.00	.00	3.6	.00	1620	.31
12	.00	.00	.00	.00	.00	.00	.00	.00	20	.00	5530	.31
13	.00	.00	.00	.00	.00	.00	.00	.00	1.9	.00	3160	.31
14	.00	.00	.00	.00	.01	.00	.00	.00	.36	.00	729	.26
15	.00	.00	.00	.00	.00	.00	.00	.00	.10	.00	68	.26
16	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	35	.26
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	21	.26
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	9.6	.26
19	.00	.00	.00	.00	.00	.00	.00	35	.00	.00	4.6	.26
20	.00	.00	.00	.00	.00	.00	.00	233	.00	.00	2.8	.26
21	.00	.00	.00	.00	.00	.00	.00	101	.00	.00	1.8	.26
22	.00	.00	.00	.00	.00	.00	.00	100	.00	.00	1.3	.26
23	.00	.00	.00	.00	.00	.00	.00	25	.00	54	.99	.26
24	.00	.00	.00	.00	.00	.00	.00	4.3	.00	5.7	.81	.26
25	.00	.00	.00	.00	.00	.00	.00	3.8	.00	.43	.70	.26
26	.00	.00	.00	.00	.00	.00	.00	2.0	.00	.11	.61	.26
27	.00	.00	.00	.00	.00	.00	.00	.63	.00	.01	.56	.26
28	.00	.00	.00	.00	.00	.00	.00	.26	.00	.00	.50	17
29	.00	.00	.00	.00	.00	.00	.00	20	.00	.00	.47	5.9
30	.00	.00	.00	.00	---	.00	.00	16	.00	.00	201	.50
31	.00	---	.00	.00	---	.00	---	2.4	---	.00	96	---
TOTAL	.00	.00	.00	.00	.01	.00	.00	543.39	27.09	60.25	11688.74	70.89
MEAN	.000	.000	.000	.000	.000	.000	.000	17.5	.90	1.94	377	2.36
MAX	.00	.00	.00	.00	.01	.00	.00	233	20	54	5530	29
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.26
AC-FT	.00	.00	.00	.00	.02	.00	.00	1080	54	120	23180	141

CAL YR 1979 TOTAL 8251.86 MEAN 22.6 MAX 1640 MIN .00 AC-FT 16370
WTR YR 1980 TOTAL 12390.37 MEAN 33.9 MAX 5530 MIN .00 AC-FT 24580

08194500 NUECES RIVER NEAR TILDEN, TX

LOCATION.--Lat 28°18'31", long 98°33'25", McMullen County, Hydrologic Unit 12110105, on right bank at downstream side of pier of bridge on State Highway 16, 1.8 mi (2.9 km) upstream from Kings Branch, 10.5 mi (16.9 km) south of Tilden, and at mile 141.2 (227.2 km).

DRAINAGE AREA.--8,192 mi² (21,217 km²).

PERIOD OF RECORD.--November 1942 to current year.

REVISED RECORDS.--WSP 1512: 1947. WSP 1732: 1951(M).

GAGE.--Water-stage recorder. Datum of gage is 183.5 ft (55.93 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Part of flow of Nueces River and its headwater tributaries enters Edwards and associated limestones in the Balcones Fault Zone, which crosses basin between Laguna and Uvalde (stations 08190000 and 08192000, respectively). Some loss of flow into various permeable formations occurs downstream from the Balcones Fault Zone. Some diversions for irrigation above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--37 years (water years 1944-80), 441 ft³/s (12.49 m³/s), 319,500 acre-ft/yr (394 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 76,500 ft³/s (2,170 m³/s) Sept. 24, 1967, gage height, 26.57 ft (8.099 m); no flow at times.

Maximum stage since about 1902, that of Sept. 24, 1967. Flood of Oct. 11, 1946, reached a stage of 26.46 ft (8.065 m), discharge 70,000 ft³/s (1,980 m³/s).

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in June 1935 reached a stage of 23.7 ft (7.22 m) and in July 1942 about 22 ft (6.7 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges peak above base of 1,800 ft³/s (51.0 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 26	1000	2,540	71.9	16.15	4.923
June 9	1400	2,730	77.3	16.39	4.996
Aug. 15	1700	*13,800	391	20.62	6.285

Minimum discharge, no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.13	.00	.00	.04	.02	.00	.01	.00	525	3.1	.00	201
2	.12	.00	.00	.05	.04	.00	.02	.00	737	2.9	.00	93
3	.13	.00	.00	.05	.05	.00	.02	.00	912	2.7	.00	35
4	.08	.00	.01	.04	.05	.00	.00	.00	1040	2.4	.00	18
5	.05	.00	.01	.04	.05	.00	.00	.00	1180	1.6	.00	11
6	.04	.00	.03	.05	.06	.00	.00	.00	1360	1.2	.00	7.8
7	.03	.00	.03	.05	.08	.00	.00	.00	1700	1.0	.00	6.2
8	.06	.00	.03	.05	.11	.00	.00	.00	2300	.94	.00	8.4
9	.06	.00	.03	.06	.09	.00	.00	.00	2690	.82	.00	207
10	.03	.00	.04	.06	.11	.01	.00	.00	2110	.75	19	470
11	.01	.00	.06	.09	.11	.02	.00	.00	327	.74	2820	177
12	.02	.00	.06	.11	.26	.03	.00	.00	104	.60	2300	84
13	.03	.00	.13	.13	.26	.03	.00	.00	68	.55	1640	56
14	.04	.00	.10	.08	.06	.01	.00	24	62	.46	1560	38
15	.03	.00	.13	.06	.05	.02	.00	356	38	.43	10600	22
16	.02	.00	.09	.06	.02	.04	.00	317	26	.40	10100	13
17	.02	.00	.07	.06	.00	.11	.00	108	15	.28	5620	8.2
18	.01	.00	.06	.05	.00	.09	.00	384	11	.20	3770	5.0
19	.00	.01	.07	.05	.00	.09	.00	977	8.4	.06	3030	3.2
20	.00	.01	.09	.14	.00	.09	.00	1050	7.9	.00	2590	2.1
21	.00	.01	.13	.42	.00	.06	.00	1030	7.6	.00	2290	1.5
22	.00	.00	.16	.65	.01	.04	.00	1230	5.6	.00	1970	1.1
23	.00	.00	.12	.80	.03	.03	.00	1500	4.4	.00	718	.91
24	.00	.00	.09	.22	.01	.02	.00	1640	4.2	2.1	158	.91
25	.00	.01	.06	.06	.00	.01	.00	2130	4.0	1.2	76	.85
26	.00	.01	.06	.04	.00	.01	.00	2490	3.9	.29	59	.82
27	.00	.00	.06	.01	.00	.07	.00	1600	3.7	.10	42	1.0
28	.00	.00	.08	.00	.00	.13	.00	318	3.6	.02	30	1.3
29	.00	.00	.09	.00	.00	.07	.00	175	3.4	.00	23	1.2
30	.00	.00	.07	.02	---	.04	.00	263	3.3	.00	137	1.3
31	.00	---	.05	.03	---	.03	---	292	---	.00	129	---
TOTAL	.91	.05	2.01	3.57	1.47	1.05	.05	15884.00	15265.0	24.84	49681.00	1476.79
MEAN	.029	.002	.065	.12	.051	.034	.002	512	509	.80	1603	49.2
MAX	.13	.01	.16	.80	.26	.13	.02	2490	2690	3.1	10600	470
MIN	.00	.00	.00	.00	.00	.00	.00	.00	3.3	.00	.00	.82
CFSM	.000	.000	.000	.000	.000	.000	.000	.06	.06	.000	.20	.006
IN.	.00	.00	.00	.00	.00	.00	.00	.07	.07	.00	.23	.01
AC-FT	1.8	.10	4.0	7.1	2.9	2.1	.10	31510	30280	49	98540	2930

CAL YR 1979 TOTAL 83828.01 MEAN 230 MAX 7550 MIN .00 CFSM .03 IN .38 AC-FT 166300
WTR YR 1980 TOTAL 82340.74 MEAN 225 MAX 10600 MIN .00 CFSM .03 IN .37 AC-FT 163300

08195000 FRIO RIVER AT CONCAN, TX

LOCATION.--Lat 29°29'18", long 99°42'16", Uvalde County, Hydrologic Unit 12110106, on left bank 0.7 mi (1.1 km) southeast of Concan Post Office, 15 mi (24 km) upstream from Dry Frio River, and 224.1 mi (360.6 km) upstream from mouth.

DRAINAGE AREA.--405 mi² (1,049 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to September 1929, October 1930 to current year.

REVISED RECORDS.--WSP 1342: Drainage area. WSP 1512: 1926, 1931-32, 1934(M), 1935-36. WSP 1712: 1958. WSP 1923: 1954(M), 1957(M).

GAGE.--Water-stage recorder. Datum of gage is 1,203.71 ft (366.891 m) National Geodetic Vertical Datum of 1929. Oct. 26, 1923, to July 28, 1924, nonrecording gage at site 86 ft (26 m) upstream at datum 5.08 ft (1.548 m) lower. July 29, 1924, to Oct. 3, 1930, nonrecording gage, and Oct. 4, 1930, to May 18, 1939, water-stage recorder, at site 130 ft (40 m) downstream at present datum.

REMARKS.--Water-discharge records good. Many small diversions for irrigation above station.

AVERAGE DISCHARGE.--55 years (water years 1925-29, 1931-80), 109 ft³/s (3.087 m³/s), 3.65 in/yr (93 mm/yr), 78,970 acre-ft/yr (97.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 162,000 ft³/s (4,590 m³/s) July 1, 1932, gage height, 34.44 ft (10.497 m), from floodmarks, from rating curve extended above 44,000 ft³/s (1,250 m³/s) on basis of flow-over-dam measurement of 56,600 ft³/s (1,600 m³/s) and slope-area measurement of 162,000 ft³/s (4,590 m³/s); no flow Aug. 5, 1956, to Jan 6, 1957.

Maximum stage since at least 1869, that of July 1, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Sept. 7	1800	23,800	674	14.62	4.456
Sept. 29	1200	*28,100	796	16.02	4.883

Minimum discharge, 11 ft³/s (0.31 m³/s) Aug. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	47	56	63	66	53	52	38	52	25	13	21
2	54	48	57	63	67	55	52	47	49	25	13	20
3	53	47	58	62	65	56	51	49	49	25	13	18
4	52	44	58	63	65	53	50	48	47	26	14	18
5	52	44	58	63	65	53	50	43	45	25	12	17
6	52	47	58	63	65	54	49	41	45	25	13	16
7	51	47	58	63	66	54	50	40	45	25	13	4870
8	52	48	58	63	65	54	49	42	44	25	13	1230
9	51	47	58	63	63	54	47	38	43	23	13	342
10	50	47	60	63	64	53	47	36	46	21	17	229
11	50	46	60	63	65	51	45	37	43	19	116	203
12	51	48	62	63	64	52	44	37	42	18	42	174
13	50	49	63	62	63	52	47	54	40	18	29	161
14	52	48	63	62	63	52	48	45	39	16	27	148
15	51	48	63	63	63	52	47	82	38	16	27	137
16	51	49	61	63	63	52	44	96	38	16	27	129
17	51	66	60	75	63	49	43	70	35	15	32	121
18	51	71	60	68	63	49	41	62	33	15	203	114
19	50	58	60	67	63	50	39	68	31	14	85	110
20	50	57	60	66	60	47	40	59	31	15	60	105
21	49	60	60	66	58	48	41	61	30	17	49	102
22	48	54	60	69	58	48	39	61	30	16	41	98
23	48	54	62	67	59	48	40	55	31	18	37	95
24	49	55	63	67	58	44	40	55	31	16	32	92
25	49	58	64	67	58	48	48	53	30	15	31	89
26	50	58	63	65	56	48	43	52	30	15	30	87
27	49	58	63	66	54	60	43	59	25	15	27	97
28	49	60	63	67	54	63	42	53	26	18	27	101
29	48	58	63	67	57	57	37	52	25	23	24	6270
30	47	57	63	67	---	54	35	51	27	18	24	694
31	46	---	64	66	---	52	---	50	---	14	22	---
TOTAL	1560	1578	1879	2015	1793	1615	1343	1634	1120	592	1126	15908
MEAN	50.3	52.6	60.6	65.0	61.8	52.1	44.8	52.7	37.3	19.1	36.3	530
MAX	54	71	64	75	67	63	52	96	52	26	203	6270
MIN	46	44	56	62	54	44	35	36	25	14	12	16
CFSM	.12	.13	.15	.16	.15	.13	.11	.13	.09	.05	.09	1.31
IN.	.14	.14	.17	.19	.16	.15	.12	.15	.10	.05	.10	1.46
AC-FT	3090	3130	3730	4000	3560	3200	2660	3240	2220	1170	2230	31550

CAL YR 1979 TOTAL 46882 MEAN 128 MAX 2770 MIN 44 CFSM .32 IN 4.31 AC-FT 92990
WTR YR 1980 TOTAL 32163 MEAN 87.9 MAX 6270 MIN 12 CFSM .22 IN 2.95 AC-FT 63800

08195000 FRIO RIVER AT CONCAN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
JAN 09...	1116	60	404	8.2	11.5	0	.20	10.4	98	.3
MAY 13...	1310	37	377	8.0	25.0	0	.60	8.1	103	1.2
JUL 30...	1550	17	362	8.1	32.0	0	1.0	10.0	141	1.9

DATE	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
JAN 09...	K32	K6	K9	200	15	55	14	6.8	.2
MAY 13...	>65	K65	31	180	16	49	14	7.3	.2
JUL 30...	>140	140	K15	160	5	43	13	7.7	.3

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)
JAN 09...	.8	220	0	11	12	.2	9.7	218	6
MAY 13...	.9	200	0	15	13	.1	11	209	15
JUL 30...	1.1	190	0	14	14	.2	14	201	1

DATE	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
JAN 09...	6	.69	.02	.71	.01	.36	.37	.010	4.7
MAY 13...	2	.29	.01	.30	.01	.39	.40	.030	1.7
JUL 30...	0	.28	.01	.29	.08	.79	.87	.010	12

DATE	TIME	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
JAN 09...	1116	1	30	<1	0	0	<10
JUL 30...	1550	1	30	<1	10	0	10

DATE	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
JAN 09...	0	<1	.1	0	0	<3
JUL 30...	0	<1	.0	0	0	<3

08195000 FRIO RIVER AT CONCAN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JAN									
09...	1116	.0	.00	.00	.0	.00	.00	.00	.00
JUL									
30...	1550	.0	.00	.00	.0	.00	.00	.00	.00

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JAN									
09...	.00	.00	.00	.00	.00	.00	.00	.00	.00
JUL									
30...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN									
09...	.00	.00	.00	.00	0	.00	.00	.00	.00
JUL									
30...	.00	.00	.00	.00	0	.00	.00	.05	.00

08196000 DRY FRIO RIVER NEAR REAGAN WELLS, TX

LOCATION.--Lat 29°30'16", long 99°46'52", Uvalde County, Hydrologic Unit 12110106, on right bank 2.3 mi (3.7 km) upstream from bridge on U.S. Highway 83, 3.1 mi (5.0 km) upstream from Rocky Creek, and 4.3 mi (6.9 km) southeast of Reagan Wells.

DRAINAGE AREA.--117 mi^2 (303 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1952 to current year.

REVISED RECORDS.--WSP 1712: 1953. WSP 1923: 1955(M).

GAGE.--Water-stage recorder. Datum of gage is 1,335.2 ft (406.97 m) State Department of Highways and Public Transportation datum.

REMARKS.--Water-discharge records good. Several small diversions above station.

AVERAGE DISCHARGE.--28 years, 34.1 ft^3/s (0.966 m^3/s), 3.96 in/yr (101 mm/yr), 24,710 acre-ft/yr (30.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 123,000 ft^3/s (3,480 m^3/s) Aug. 13, 1966, gage height, 27.6 ft (8.41 m), from floodmark, from rating curve extended above 900 ft^3/s (25.5 m^3/s) on basis of slope-area measurements of 11,400, 30,700, 64,700, and 123,000 ft^3/s (323, 869, 1,830, and 3,480 m^3/s); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1875 occurred in 1880, about 33 ft (10.1 m). Flood of June 14, 1935, reached a stage of 26.0 ft (7.92 m), discharge at site 2.6 mi (4.2 km) upstream, 64,700 ft^3/s (1,830 m^3/s), and that of July 1, 1932, reached a stage of 23 ft (7.0 m), discharge at site 2.0 mi (3.2 km) upstream, 30,700 ft^3/s (869 m^3/s), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft^3/s (5.66 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 15	1530	373	10.6	3.26	0.994
Aug. 11	0400	259	7.33	3.02	.920
Sept. 7	1930	*5,070	144	9.65	2.941

Minimum discharge, 0.80 ft^3/s (0.023 m^3/s) Aug. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.1	6.0	7.3	8.6	8.3	6.6	9.4	3.7	8.5	2.5	1.8	3.3
2	5.1	6.3	7.5	8.6	8.2	6.4	9.4	3.9	6.7	2.4	1.8	3.0
3	4.8	6.3	7.5	8.6	8.2	6.3	9.1	6.8	4.7	2.4	1.6	2.9
4	5.4	6.4	7.5	8.7	8.1	6.5	8.3	8.6	4.5	2.3	1.7	2.8
5	5.2	6.6	7.3	8.6	8.2	6.6	7.8	7.2	4.1	2.3	1.5	2.8
6	5.4	6.8	7.2	8.8	7.9	6.8	7.4	6.3	3.7	2.3	1.2	2.8
7	5.8	6.9	7.5	8.7	7.9	6.9	7.0	5.8	4.3	2.3	1.2	538
8	5.6	6.9	7.4	8.6	8.1	6.9	6.5	6.2	5.1	2.3	1.2	258
9	5.5	7.1	7.5	8.6	8.0	6.8	6.2	6.0	5.1	2.2	1.0	25
10	5.4	7.2	7.6	8.5	7.9	7.0	6.0	5.5	5.0	2.1	1.1	9.2
11	5.3	7.4	7.9	8.6	7.9	6.9	6.1	5.5	4.0	2.1	67	7.4
12	5.3	7.5	8.5	8.4	8.2	6.9	6.3	5.6	4.1	2.1	8.6	7.1
13	5.3	7.5	8.6	8.1	8.2	6.5	6.5	6.8	4.8	1.9	6.5	7.3
14	5.4	7.5	8.4	8.0	8.2	6.9	6.3	9.7	4.3	1.1	5.7	6.9
15	5.6	7.5	8.2	8.0	8.3	6.9	6.0	95	3.7	1.0	5.5	7.1
16	5.6	7.7	8.2	8.2	8.5	7.1	5.9	58	3.7	1.0	5.5	6.8
17	5.6	11	8.2	9.8	8.2	7.3	5.9	23	2.8	.98	5.4	6.6
18	5.5	12	8.2	12	8.1	7.2	5.7	17	2.3	.94	5.1	6.6
19	5.3	9.0	8.2	10	8.0	6.9	5.5	16	2.4	1.2	4.9	6.5
20	5.0	7.8	8.0	10	7.9	7.1	5.5	13	2.7	1.5	4.7	6.5
21	4.9	8.4	8.2	10	7.6	6.7	5.4	11	3.1	1.5	4.5	6.6
22	4.9	7.9	8.4	11	7.2	6.9	5.4	9.5	2.7	1.6	4.4	6.5
23	4.8	7.9	8.9	10	6.9	7.4	5.5	8.8	2.7	1.4	4.5	6.5
24	4.8	8.1	8.7	9.7	6.9	7.1	5.0	8.5	2.6	1.5	4.4	6.5
25	4.9	7.9	8.6	9.4	6.4	7.3	5.6	8.2	2.5	1.5	4.2	6.6
26	5.1	7.7	8.4	9.2	6.3	7.2	5.0	8.6	2.0	1.5	3.9	6.7
27	5.2	7.3	8.6	9.0	6.6	9.9	4.3	19	1.6	1.5	3.8	7.6
28	5.3	7.3	9.0	9.0	6.6	12	3.9	11	1.5	1.7	3.7	8.0
29	5.6	7.2	9.3	9.4	6.6	10	3.7	9.1	1.9	1.7	3.6	10
30	5.7	7.2	9.0	9.1	---	9.7	3.4	8.6	2.5	1.7	3.6	10
31	6.0	---	8.6	8.9	---	9.4	---	8.9	---	1.8	3.6	---
TOTAL	164.4	228.3	252.4	282.1	223.4	230.1	184.0	420.8	109.6	54.32	177.2	991.6
MEAN	5.30	7.61	8.14	9.10	7.70	7.42	6.13	13.6	3.65	1.75	5.72	33.1
MAX	6.0	12	9.3	12	8.5	12	9.4	95	8.5	2.5	67	538
MIN	4.8	6.0	7.2	8.0	6.3	6.3	3.4	3.7	1.5	.94	1.0	2.8
CFSM	.05	.07	.07	.08	.07	.06	.05	.12	.03	.02	.05	.28
IN.	.05	.07	.08	.09	.07	.07	.06	.13	.03	.02	.06	.32
AC-FT	326	453	501	560	443	456	365	835	217	108	351	1970

CAL YR 1979 TOTAL 14326.60 MEAN 39.3 MAX 1480 MIN 4.8 CFSM .34 IN 4.56 AC-FT 28420
WTR YR 1980 TOTAL 3318.22 MEAN 9.07 MAX 538 MIN .94 CFSM .08 IN 1.06 AC-FT 6580

08196000 DRY FRIO RIVER NEAR REAGAN WELLS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
JAN 09...	1343	8.5	377	8.1	13.0	0	.10	10.4	102	.3
MAY 13...	0953	5.2	377	7.7	22.5	0	.50	7.7	93	1.5
JUL 30...	1412	1.7	392	8.2	33.5	0	1.4	10.0	144	1.0

DATE	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
JAN 09...	K20	K13	K8	180	18	53	12	6.5	.2
MAY 13...	1500	K280	230	180	15	52	12	6.6	.2
JUL 30...	>36	36	K9	180	10	53	12	6.7	.2

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)
JAN 09...	.5	200	0	15	11	.1	7.9	205	3
MAY 13...	.6	200	0	16	15	.1	9.5	210	29
JUL 30...	.7	210	0	12	12	.2	12	212	0

DATE	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
JAN 09...	3	.86	.02	.88	.03	.40	.43	.000	3.5
MAY 13...	0	.27	.01	.28	.01	.30	.31	.010	1.2
JUL 30...	0	.12	.01	.13	.06	1.5	1.6	.010	9.3

DATE	TIME	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
JAN 09...	1343	0	30	<1	0	0	<10
JUL 30...	1412	1	40	<1	0	0	<10

DATE	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
JAN 09...	0	<1	.2	0	0	<3
JUL 30...	0	3	.0	0	0	<3

08196000 DRY FRIO RIVER NEAR REAGAN WELLS, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JAN									
09...	1343	.0	.00	.00	.0	.00	.00	.00	.00
JUL									
30...	1412	.0	.00	.00	.0	.00	.00	.00	.00

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JAN									
09...	.00	.00	.00	.00	.00	.00	.00	.00	.00
JUL									
30...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN									
09...	.00	.00	.00	.00	0	.00	.00	.00	.00
JUL									
30...	.00	.00	.00	.00	0	.00	.00	.00	.00

08197500 FRIO RIVER BELOW DRY FRIO RIVER NEAR UVALDE, TX

LOCATION.--Lat 29°14'44", long 99°40'27", Uvalde County, Hydrologic Unit 12110106, on right bank 1.1 mi (1.8 km) upstream from Farm Road 1023, 5.7 mi (9.2 km) downstream from Dry Frio River, 6.3 mi (10.1 km) downstream from bridge on U.S. Highway 90, and 7.2 mi (11.6 km) northeast of Uvalde.

DRAINAGE AREA.--661 mi² (1,712 km²).

PERIOD OF RECORD.--September 1952 to current year. Sum of records published as Frio River at Knippa and Dry Frio River at Knippa for period September 1952 to September 1953 is equivalent to record for this station.

GAGE.--Water-stage recorder. Datum of gage is 882.47 ft (268.977 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Part of flow of Frio River enters the Edwards and associated limestones in the Balcones Fault Zone, which crosses basin between Concan (station 08195000) and this station. Most of low flow enters this formation. Many diversions for irrigation above station. Two observations of water temperature were made during the year.

AVERAGE DISCHARGE.--28 years, 25.7 ft³/s (0.728 m³/s), 18,620 acre-ft/yr (23.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 88,500 ft³/s (2,510 m³/s) Aug. 13, 1966, gage height, 23.88 ft (7.279 m), from floodmark, from rating curve extended above 12,000 ft³/s (340 m³/s) on basis of slope-area measurements of 24,400, 53,000, and 88,500 ft³/s (691, 1,500, and 2,510 m³/s); no flow most of time each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1887, about 35 ft (10.7 m) in 1894. Flood of July 1, 1932, reached a stage of about 30 ft (9.1 m). A higher flood than that of 1894 occurred prior to 1887. Above information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Sept. 8	0330	12,600	357	11.49	3.502
Sept. 29	1830	*16,500	467	12.60	3.840

Minimum discharge, no flow most of time.

DISCHARGED IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3120
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	273
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	44
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.1
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.27
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3500
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	4900
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	11839.42
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	395
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	4900
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	23480

CAL YR 1979 TOTAL 8248.24 MEAN 22.6 MAX 4720 MIN .00 AC-FT 16360
WTR YR 1980 TOTAL 11839.42 MEAN 32.3 MAX 4900 MIN .00 AC-FT 23480

08198000 SABINAL RIVER NEAR SABINAL, TX

LOCATION.--Lat 29°29'35", long 99°29'49", Uvalde County, Hydrologic Unit 12110106, on right bank 108 ft (33 m) upstream from concrete dam, 2.3 mi (3.7 km) downstream from mouth of Onion Creek, and 12.5 mi (20.1 km) north of Sabinal.

DRAINAGE AREA.--206 mi^2 (534 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1942 to current year.

REVISED RECORDS.--WSP 1312: 1943(M), 1944(M), 1947(M).

GAGE.--Water-stage recorder. Datum of gage is 1,131.20 ft (344.790 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 9, 1971, at site 0.3 mi (0.5 km) downstream at same datum.

REMARKS.--Water-discharge records good except those for period of no gage-height record Aug. 22 to Sept. 17, which are fair. Several small diversions above station for irrigation.

AVERAGE DISCHARGE.--38 years, 53.6 ft^3/s (1.518 m^3/s), 3.53 in/yr (90 mm/yr), 38,830 acre-ft/yr (47.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 55,200 ft^3/s (1,560 m^3/s) June 17, 1958, gage height, 28.3 ft (8.63 m), from floodmark at present site, from rating curve extended above 6,900 ft^3/s (195 m^3/s) on basis of slope-area measurement of 55,200 ft^3/s (1,560 m^3/s); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1892, about 33 ft (10.1 m) July 2, 1932, from information by local residents. There is a legend that a flood in the middle 1800's reached a stage of nearly 63 ft (19.2 m), see flood history for station 08198500.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft^3/s (28.3 m^3/s) and maximum (*):

Date	Time	Discharge		Gage height	
		(ft^3/s)	(m^3/s)	(ft)	(m)
Sept. 7	unknown	*18,000	510	16.9	5.15
Sept. 29	0700	14,600	413	14.90	4.542

Minimum daily discharge, 1.1 ft^3/s (0.031 m^3/s) Sept. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	18	23	19	18	15	22	11	18	3.6	2.4	1.7
2	27	19	23	19	18	14	21	19	18	3.4	1.8	1.5
3	27	20	23	19	18	16	19	13	17	3.4	1.8	1.4
4	25	19	23	19	18	18	19	13	16	3.3	1.6	1.3
5	26	19	23	19	18	17	18	13	14	3.0	1.6	1.2
6	26	19	23	19	18	16	17	13	13	3.0	1.3	1.1
7	26	20	23	18	18	16	16	11	12	2.7	1.3	4000
8	25	20	23	18	17	16	14	14	11	2.7	1.3	1400
9	24	20	22	18	17	16	14	13	10	2.7	1.3	400
10	22	20	22	18	17	16	14	12	10	2.7	2.1	100
11	22	20	22	18	18	16	14	12	10	2.6	23	85
12	23	20	23	18	18	16	14	11	10	2.1	13	75
13	23	20	25	18	18	16	13	13	9.5	1.8	8.2	69
14	23	20	26	18	18	16	13	36	8.7	1.8	6.1	63
15	22	20	26	18	18	16	13	29	8.0	1.8	5.6	58
16	22	20	25	18	18	16	13	45	7.4	1.8	5.6	54
17	22	25	23	19	18	15	13	39	7.3	2.3	5.6	51
18	22	38	20	18	18	14	13	33	6.7	2.4	5.6	48
19	21	29	20	18	18	13	13	45	6.1	2.1	6.5	47
20	20	26	20	19	18	13	12	39	5.6	2.1	7.4	46
21	20	24	20	19	18	13	12	45	5.6	2.1	7.0	44
22	20	24	20	19	18	13	11	35	5.6	2.0	5.8	44
23	19	24	20	20	18	12	10	30	5.6	4.9	4.6	42
24	19	24	20	20	18	13	10	27	5.6	4.5	3.8	42
25	19	26	20	20	17	13	12	25	5.5	4.5	3.3	43
26	19	24	19	20	17	13	11	22	5.0	4.1	3.0	43
27	19	24	19	19	16	22	10	22	4.5	3.7	2.8	52
28	19	24	19	19	16	27	10	22	4.1	3.4	2.5	58
29	19	23	19	19	17	26	9.5	20	4.1	3.4	2.3	2120
30	19	23	19	19	---	23	8.8	19	3.7	3.0	2.1	188
31	18	---	19	19	---	22	---	19	---	2.7	1.9	---
TOTAL	685	672	672	581	512	508	409.3	720	267.6	89.6	142.2	9180.2
MEAN	22.1	22.4	21.7	18.7	17.7	16.4	13.6	23.2	8.92	2.89	4.59	306
MAX	27	38	26	20	18	27	22	45	18	4.9	23	4000
MIN	18	18	19	18	16	12	8.8	11	3.7	1.8	1.3	1.1
CFSM	.11	.11	.11	.09	.09	.08	.07	.11	.04	.01	.02	1.49
IN.	.12	.12	.12	.10	.09	.09	.07	.13	.05	.02	.03	1.66
AC-FT	1360	1330	1330	1150	1020	1010	812	1430	531	178	282	18210

CAL YR 1979 TOTAL 37632.0 MEAN 103 MAX 1860 MIN 18 CFSM .50 IN 6.80 AC-FT 74640
WTR YR 1980 TOTAL 14438.9 MEAN 39.5 MAX 4000 MIN 1.1 CFSM .19 IN 2.61 AC-FT 28640

NOTE.--No gage-height record Aug. 22 to Sept. 17.

08198000 SABINAL RIVER NEAR SABINAL, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, WATER (DEG C)	COLOR (PLAT-INUM COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
JAN 08...	1532	18	453	8.1	13.0	5	.10	10.6	104	.4
MAY 14...	1017	32	442	8.0	22.0	0	1.4	8.0	95	1.7
JUL 31...	1053	2.4	451	7.6	26.5	0	1.4	6.9	88	1.8

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
JAN 08...	>28	28	55	220	24	67	13	7.9	.2
MAY 14...	830	540	560	220	29	64	14	8.6	.3
JUL 31...	K95	57	20	210	33	64	13	9.3	.3

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)
JAN 08...	.9	240	0	27	13	.2	11	258	9
MAY 14...	1.1	230	0	27	16	.2	12	256	24
JUL 31...	1.3	220	0	31	17	.5	16	261	2

DATE	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
JAN 08...	7	.65	.02	.67	.01	.41	.42	.010	2.1
MAY 14...	1	.23	.01	.24	.03	.64	.67	.010	1.5
JUL 31...	0	.00	.00	.00	.05	.62	.67	.010	5.8

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
JAN 08...	1532	0	30	<1	0	0	<10
JUL 31...	1053	1	40	<1	0	0	10

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN 08...	0	<1	.1	1	0	<3
JUL 31...	0	6	.1	0	0	<3

08198000 SABINAL RIVER NEAR SABINAL, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JAN 08...	1532	.0	.00	.00	.0	.00	.00	.00	.00
JUL 31...	1053	.0	.00	.00	.0	.00	.00	.00	.00

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JAN 08...	.00	.00	.00	.00	.00	.00	.00	.00	.00
JUL 31...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 08...	.00	.00	.00	.00	0	.00	.00	.00	.00
JUL 31...	.00	.00	.00	.00	0	.00	.00	.00	.00

08198500 SABINAL RIVER AT SABINAL, TX

LOCATION.--Lat 29°18'47", long 99°28'46", Uvalde County, Hydrologic Unit 12110106. on left bank 80 ft (24 m) downstream from bridge on U.S. Highway 90, 1,100 ft (335 m) downstream from Southern Pacific Lines railroad bridge, 0.8 mi (1.3 km) west of Sabinal, and 5.8 mi (9.3 km) upstream from Ranchero Creek.

DRAINAGE AREA.--247 mi² (640 km²).

PERIOD OF RECORD.--September 1952 to current year.

GAGE.--Water-stage recorder. Datum of gage is 882.17 ft (268.885 m) National Geodetic Vertical Datum of 1929. Prior to July 29, 1958, nonrecording gage, and July 29, 1958, to Mar. 19, 1964, water-stage recorder at site 80 ft (24 m) upstream at same datum.

REMARKS.--Records good. Several small diversions for irrigation above station. Most of low flow of the Sabinal River enters the Edwards and associated limestones in the Balcones Fault Zone, which crosses basin upstream from this station and downstream from Sabinal River near Sabinal (station 08198000). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--28 years, 30.7 ft³/s (0.869 m³/s), 22,240 acre-ft/yr (27.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73,300 ft³/s (2,080 m³/s) June 17, 1958, gage height, 33.3 ft (10.15 m); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1890, 40 ft (12.2 m) Aug. 24, 1919, from information by local residents. Flood of July 2, 1932, reached a stage of 31 ft (9.4 m), discharge 60,000 ft³/s (1,700 m³/s), from information by Southern Pacific Lines. There is a legend that a flood in 1858 covered the townsite of Sabinal. The stage would have been 70 to 80 ft (21.3 to 24.4 m), which seems unlikely. However, it is possible that a flood occurred in 1858 that covered part of the townsite and was higher than any flood since that date.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft³/s (2.83 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Sept. 7	2200	*17,500	496	a20.56	6.267
Sept. 8	1400	1,610	45.6	9.15	2.789
Sept. 29	1300	5,830	165	a13.88	4.231

a From floodmark.

Minimum discharge, 0.18 ft³/s (0.005 m³/s) Apr. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	1.9	2.2	1.9	1.1	1.2	.85	.45	.65	.47	.60	.82
2	2.2	1.8	2.2	1.9	1.2	1.3	.85	.60	.60	.45	.60	.72
3	2.1	1.9	2.1	1.9	1.2	1.2	.92	.62	.59	.55	.60	.72
4	2.1	1.9	2.1	1.8	1.2	1.2	.85	.78	.55	.59	.60	.72
5	2.1	1.7	2.1	1.8	1.3	1.3	.92	.83	.54	.55	.60	.71
6	2.2	1.6	2.0	1.7	1.3	1.2	1.1	.77	.49	.60	.60	.67
7	2.2	1.6	1.9	1.7	1.5	1.3	1.1	.72	.55	.60	.61	1750
8	2.1	1.6	1.8	1.5	1.4	1.4	.92	1.2	.55	.60	.66	1540
9	2.0	1.6	1.8	1.5	1.4	1.5	.92	.59	.55	.59	.61	301
10	2.0	1.7	1.8	1.5	1.3	1.4	.99	.52	.55	.55	1.3	91
11	2.0	1.8	1.7	1.5	1.3	1.4	1.1	.55	.57	.55	15	52
12	2.1	1.6	1.8	1.3	1.3	1.3	1.2	.52	.60	.53	.96	29
13	2.1	1.5	1.7	1.2	1.3	1.4	1.3	.54	.60	.49	.78	15
14	2.2	1.4	1.5	1.3	1.2	1.2	1.1	.82	.60	.49	.78	9.4
15	2.0	1.4	1.6	1.2	1.2	1.4	1.1	.91	.64	.55	.78	7.0
16	1.9	1.5	1.5	1.6	1.3	1.5	1.1	.92	.58	.54	.87	5.8
17	1.9	11	1.9	1.3	1.2	1.1	1.1	.77	.60	.49	.98	5.3
18	1.9	6.0	1.9	1.2	1.2	1.1	.99	.72	.60	.49	1.1	5.0
19	1.8	3.0	1.9	1.2	1.2	1.2	1.1	.72	.60	.49	1.1	4.7
20	2.0	3.0	2.0	1.2	1.2	1.1	1.1	.71	.55	.49	1.1	4.6
21	2.1	3.0	2.0	1.3	1.1	1.1	1.2	.72	.60	.52	1.1	4.5
22	1.9	3.0	1.9	1.2	1.2	1.2	1.1	.72	.59	.60	1.1	4.2
23	1.9	2.9	2.0	1.1	1.2	1.2	.92	.72	.54	.72	1.1	3.9
24	1.9	2.9	2.4	1.1	1.3	.81	.99	.70	.55	.72	1.1	3.9
25	1.8	3.0	2.4	1.1	1.3	.82	1.2	.67	.55	.71	1.1	3.7
26	2.0	2.8	2.3	1.1	1.3	.87	.99	.76	.55	.60	1.0	3.6
27	2.0	2.8	2.2	1.1	1.3	.66	1.1	.82	.57	.59	.99	3.6
28	2.1	2.6	2.4	1.2	1.3	.92	1.1	.78	.55	.53	.99	3.5
29	1.9	2.4	2.3	1.2	1.3	.99	.92	.83	.48	.49	.92	1320
30	1.9	2.3	2.2	1.2	---	.99	.49	.77	.48	.49	.92	405
31	1.9	---	2.0	1.2	---	.99	---	.71	---	.57	.85	---
TOTAL	62.6	77.2	61.6	43.0	36.6	36.25	30.62	22.46	17.02	17.20	41.40	5580.06
MEAN	2.02	2.57	1.99	1.39	1.26	1.17	1.02	.72	.57	.55	1.34	186
MAX	2.3	11	2.4	1.9	1.5	1.5	1.3	1.2	.65	.72	15	1750
MIN	1.8	1.4	1.5	1.1	1.1	.66	.49	.45	.48	.45	.60	.67
AC-FT	124	153	122	85	73	72	61	45	34	34	82	11070

CAL YR 1979 TOTAL 21302.47 MEAN 58.4 MAX 2190 MIN .28 AC-FT 42250
WTR YR 1980 TOTAL 6026.01 MEAN 16.5 MAX 1750 MIN .45 AC-FT 11950

08200000 HONDO CREEK NEAR TARPLEY, TX

LOCATION.--Lat 29°34'10", long 99°14'47", Medina County, Hydrologic Unit 12110107, on left bank 460 ft (140 m) downstream from bridge on Ranch Road 462, 6.3 mi (10.1 km) southeast of Tarpley, and 16.6 mi (26.7 km) northwest of Hondo.

DRAINAGE AREA.--86.2 mi^2 (223.3 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1952 to current year.

REVISED RECORDS.--WSP 1712: 1957.

GAGE.--Water-stage recorder. Datum of gage is 1,169.1 ft (356.34 m) Magnolia Oil Co. datum.

REMARKS.--Water-discharge records good. Several small diversions for irrigation above station.

AVERAGE DISCHARGE.--28 years, 38.4 ft^3/s (1.087 m^3/s), 6.05 in/yr (154 mm/yr), 27,820 acre-ft/yr (34.3 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69,800 ft^3/s (1,980 m^3/s) June 17, 1958, gage height, 28.2 ft (8.60 m), from floodmark, from rating curve extended above 2,600 ft^3/s (73.6 m^3/s) on basis of slope-area measurements of 18,600 and 69,800 ft^3/s (527 and 1,980 m^3/s); no flow at times in 1952-57, 1962-64, 1967, and 1971.

Maximum stage since at least 1907, that of June 17, 1958.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1932 reached a stage of about 26 ft (7.9 m), discharge 58,500 ft^3/s (1,660 m^3/s), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft^3/s (14.2 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 18	2300	2,680	75.9	5.60	1.707
Sept. 7	0700	*12,100	343	12.22	3.725

Minimum discharge, 0.60 ft^3/s (0.017 m^3/s) Aug. 7-9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.6	4.1	5.0	5.6	5.3	3.3	5.5	3.3	10	2.6	.90	1.5
2	7.2	4.1	4.7	5.6	5.3	2.9	5.6	5.3	10	2.3	.80	1.4
3	6.8	4.1	4.7	5.3	5.3	3.5	5.3	3.8	9.6	2.7	.70	1.3
4	6.5	3.8	4.7	5.0	5.0	3.5	5.0	4.1	9.3	1.7	.70	1.2
5	6.2	3.8	4.7	5.0	5.3	3.5	4.7	3.3	9.0	1.9	.70	1.2
6	6.2	3.8	4.4	5.0	5.0	3.3	4.4	5.2	9.0	2.5	.70	1.3
7	6.2	3.8	4.1	5.0	5.0	3.5	4.4	3.1	9.0	1.5	.60	1900
8	6.2	3.8	4.1	5.0	5.3	3.5	3.8	3.5	8.6	1.9	.60	136
9	5.9	3.8	3.8	5.0	5.0	3.1	3.5	4.1	8.2	1.9	.60	91
10	5.6	3.3	4.4	5.0	4.4	2.9	3.5	2.7	8.2	1.7	3.8	70
11	5.6	3.5	5.0	5.0	4.4	2.5	4.1	2.7	8.2	1.4	13	56
12	5.6	3.8	8.2	4.1	4.4	3.5	4.4	2.9	7.9	1.4	4.4	46
13	5.6	3.5	6.8	4.4	4.4	2.7	4.7	3.5	6.5	1.3	2.9	43
14	5.6	3.5	5.9	4.4	5.0	2.7	4.1	6.8	6.8	1.1	2.5	41
15	5.6	3.5	5.9	4.4	5.0	2.7	3.8	9.6	6.5	1.1	1.9	39
16	5.6	3.5	5.3	4.4	5.9	3.3	3.5	16	6.5	1.3	1.7	34
17	5.3	7.1	4.4	7.8	4.7	2.9	3.5	16	6.2	1.0	12	35
18	5.0	23	4.7	6.2	5.0	2.7	3.3	110	5.6	.90	5.6	32
19	5.0	9.3	5.0	6.5	4.4	2.7	3.1	189	5.3	.80	3.8	31
20	4.7	8.6	5.0	6.8	4.1	2.7	3.1	18	5.0	.70	3.3	31
21	4.4	10	5.0	7.6	4.1	2.7	6.2	25	4.7	.70	2.9	31
22	5.0	7.6	5.0	7.6	3.5	2.5	5.0	18	4.4	2.3	2.5	31
23	4.1	7.2	5.3	6.8	3.5	2.7	3.3	16	4.4	3.1	2.3	31
24	4.1	7.2	5.0	6.5	3.5	2.7	2.9	16	3.8	1.4	2.1	31
25	4.1	8.2	4.1	6.2	7.0	2.7	7.3	14	3.8	1.0	1.7	31
26	4.1	6.5	4.4	5.9	6.2	2.9	3.3	14	3.5	.90	1.5	31
27	4.1	6.2	4.7	5.3	3.8	17	2.5	15	3.3	.80	1.5	31
28	4.1	5.0	6.2	5.9	3.8	9.8	2.7	13	3.1	1.5	1.5	31
29	4.1	5.0	6.2	6.2	3.8	7.6	4.7	12	2.9	5.6	1.5	31
30	5.3	5.0	5.6	5.9	---	5.9	3.8	11	2.7	1.4	1.5	31
31	4.4	---	5.9	5.6	---	5.6	---	10	---	1.0	1.5	---
TOTAL	165.8	175.6	158.2	175.0	137.4	123.5	125.0	576.9	192.0	51.40	81.70	2902.9
MEAN	5.35	5.85	5.10	5.65	4.74	3.98	4.17	18.6	6.40	1.66	2.64	96.8
MAX	7.6	23	8.2	7.8	7.0	17	7.3	189	10	5.6	13	1900
MIN	4.1	3.3	3.8	4.1	3.5	2.5	2.5	2.7	2.7	.70	.60	1.2
CFSM	.06	.07	.06	.07	.06	.05	.05	.22	.07	.02	.03	1.12
IN.	.07	.08	.07	.08	.06	.05	.05	.25	.08	.02	.04	1.25
AC-FT	329	348	314	347	273	245	248	1140	381	102	162	5760

CAL YR 1979 TOTAL 27149.70 MEAN 74.4 MAX 1200 MIN 3.3 CFSM .86 IN 11.72 AC-FT 53850
WTR YR 1980 TOTAL 4865.40 MEAN 13.3 MAX 1900 MIN .60 CFSM .15 IN 2.10 AC-FT 9650

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
JAN 08...	1004	5.0	404	8.1	9.5	0	.20	10.3	93	.5
MAY 14...	1238	5.6	364	7.9	20.0	0	1.0	--	--	1.0
JUL 29...	1636	3.3	393	8.2	32.5	0	1.6	9.5	135	1.3

DATE	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
JAN 08...	80	50	16	200	34	61	11	7.7	.2
MAY 14...	1000	500	580	170	37	51	10	7.9	.3
JUL 29...	220	56	24	170	61	49	11	9.0	.3

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)
JAN 08...	1.0	200	0	41	12	.2	9.4	242	6
MAY 14...	1.2	160	0	38	13	.2	11	211	--
JUL 29...	1.7	130	0	66	14	.4	14	229	1

DATE	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
JAN 08...	6	.34	.00	.34	.01	.21	.22	.020	3.1
MAY 14...	--	.16	.01	.17	.04	.37	.41	.010	1.9
JUL 29...	6	.21	.02	.23	.06	1.0	1.1	.010	5.9

DATE	TIME	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
JAN 08...	1004	0	30	<1	0	0	<10
JUL 29...	1636	1	30	<1	0	0	10

DATE	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
JAN 08...	0	<1	.2	1	0	<3
JUL 29...	0	2	.1	0	0	<3

08200000 HONDO CREEK NEAR TARPLEY, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JAN									
08...	1004	--	--	--	--	--	--	--	--
JUL									
29...	1636	.0	.00	.00	.0	.00	.00	.00	.00

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JAN									
08...	--	--	--	--	--	--	--	--	--
JUL									
29...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN									
08...	--	--	--	--	--	--	.00	.00	.00
JUL									
29...	.00	.00	.00	.00	0	.00	.00	.00	.00

08200700 HONDO CREEK AT KING WATERHOLE NEAR HONDO, TX

LOCATION.--Lat 29°23'26", long 99°09'04", Medina County, Hydrologic Unit 12110107, on left bank 0.3 mi (0.5 km) downstream from county road low-water crossing, 3.1 mi (5.0 km) north of Hondo, and 7.8 mi (12.6 km) upstream from Verde Creek.

DRAINAGE AREA.--142 mi² (368 km²).

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 897.87 ft (273.671 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Most of the low flow of Hondo Creek enters Edwards and associated limestones in the Balcones Fault Zone, which crosses basin between Tarpley (station 08200000) and this station. Small diversions above station for irrigation, amounts unknown.

AVERAGE DISCHARGE.--20 years, 14.6 ft³/s (0.413 m³/s), 10,580 acre-ft/yr (13.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 46,900 ft³/s (1,330 m³/s) July 15, 1973, gage height, 16.4 ft (5.00 m), from floodmark, from rating curve extended above 9,800 ft³/s (278 m³/s) on basis of contracted-opening measurement of peak flow; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1875, 21 ft (6.4 m) in September 1919, from information by local resident. Other floods occurred in July 1932, stage 18 ft (5.5 m) and June 17, 1958, stage 17 ft (5.2 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 25,500 ft³/s (722 m³/s) Sept. 7 at 1000 hours, gage height, 12.39 ft (3.776 m), no other peak above base of 500 ft³/s (14.2 m³/s); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	4350
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	131
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	30
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	12
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	6.0	4.0
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	79	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	7.5	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	86.50	.00	.00	6.00	4527.00
MEAN	.000	.000	.000	.000	.000	.000	.000	2.79	.000	.000	.19	151
MAX	.00	.00	.00	.00	.00	.00	.00	79	.00	.00	6.0	4350
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	172	.00	.00	12	8980

CAL YR 1979 TOTAL 10723.23 MEAN 29.4 MAX 2470 MIN .00 AC-FT 21270
WTR YR 1980 TOTAL 4619.50 MEAN 12.6 MAX 4350 MIN .00 AC-FT 9160

08201500 SECO CREEK AT MILLER RANCH NEAR UTOPIA, TX

LOCATION.--Lat 29°34'23", long 99°24'10", Medina County, Hydrologic Unit 12110107, on right bank 200 ft (61 m) upstream from county road crossing, 4.5 mi (7.2 km) downstream from Cascade Creek, and 7.9 mi (12.7 km) southeast of Utopia.

DRAINAGE AREA.--43.1 mi^2 (111.6 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1961 to current year.

GAGE.--Water-stage recorder, crest-stage gages, and concrete control. Datum of gage is 1,265.8 ft (385.82 m) Magnolia Oil Co. datum, adjustment unknown.

REMARKS.--Water-discharge records good. No known diversion above station.

AVERAGE DISCHARGE.--19 years, 18.1 ft^3/s (0.513 m^3/s), 5.70 in/yr (145 mm/yr), 13,110 acre-ft/yr (16.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,500 ft^3/s (1,090 m^3/s) July 15, 1973, gage height, 14.4 ft (4.39 m), from floodmark, from rating curve extended above 910 ft^3/s (25.8 m^3/s) on basis of field estimate of flow over and around end of dam, 14,100 ft^3/s (399 m^3/s), and slope-area measurement of 52,600 ft^3/s (1,490 m^3/s); no flow for many days in 1963-64.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1901, 16.4 ft (5.00 m) June 17, 1958, from floodmarks, discharge 52,600 ft^3/s (1,490 m^3/s), by slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 676 ft^3/s (19.1 m^3/s) May 18 at 2200 hours, gage height, 3.34 ft (1.018 m), no other peak above base of 600 ft^3/s (17.0 m^3/s); minimum daily, 0.08 ft^3/s (0.002 m^3/s) July 18, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	1.7	1.8	2.6	2.0	1.8	1.8	1.8	1.8	.23	.25	.29
2	2.6	1.7	1.8	2.6	2.0	1.5	2.2	2.0	1.5	.15	.19	.29
3	2.6	1.7	1.8	2.6	2.0	1.5	2.2	1.6	1.5	.15	.16	.29
4	2.2	1.7	2.0	2.4	2.0	1.5	2.1	1.7	1.4	.14	.14	.23
5	2.0	1.7	2.0	2.4	2.0	1.5	1.9	1.6	1.3	.11	.11	.23
6	2.0	1.7	2.0	2.4	2.0	1.5	1.8	1.3	1.2	.11	.11	.36
7	2.0	1.5	1.8	2.4	2.0	1.6	1.9	1.2	1.1	.09	.09	33
8	2.0	1.5	2.0	2.4	2.2	1.7	1.9	1.9	1.1	.09	.09	15
9	2.0	1.5	2.0	2.4	1.9	1.7	1.8	2.1	.92	.09	.09	14
10	2.0	1.5	2.2	2.4	1.8	1.7	1.7	1.4	.92	.11	4.4	13
11	2.0	1.5	2.2	2.6	1.8	1.7	1.7	1.3	.79	.11	17	12
12	2.0	1.5	3.1	2.4	1.8	1.8	1.8	1.3	.79	.11	5.3	11
13	2.0	1.5	3.1	2.4	1.8	1.8	2.2	3.0	.79	.09	3.6	9.6
14	2.0	1.5	2.8	2.4	1.9	1.6	1.9	5.2	.68	.09	2.4	8.4
15	2.0	1.5	2.6	2.4	2.1	1.4	1.7	10	.68	.09	2.2	7.4
16	2.0	1.5	2.6	2.4	2.6	1.5	1.7	6.0	.58	.09	1.6	7.0
17	2.0	5.4	2.2	4.2	1.9	1.6	1.7	6.2	.58	.09	1.4	6.1
18	2.0	14	2.2	3.6	1.8	1.6	1.7	38	.58	.08	1.4	5.7
19	2.0	4.4	2.2	2.8	1.8	1.4	1.6	20	.50	.09	1.4	5.7
20	2.0	3.3	2.2	3.1	1.8	1.4	1.5	9.6	.50	.09	1.4	5.3
21	1.8	3.6	2.2	3.1	1.8	1.4	1.5	9.7	.42	.08	1.2	4.9
22	1.9	2.7	2.2	3.1	1.7	1.4	1.5	6.4	.42	.11	.79	4.3
23	1.9	2.4	2.4	2.7	1.7	1.4	1.5	4.9	.37	1.0	.68	3.9
24	1.7	2.6	2.6	2.6	1.7	1.5	1.5	4.5	.40	.97	.58	3.9
25	1.7	3.3	2.2	2.6	1.7	1.5	2.6	3.9	.40	.73	.50	3.9
26	1.7	2.4	2.2	2.6	1.7	1.5	1.7	3.4	.36	.48	.42	6.1
27	1.7	2.3	2.2	2.6	1.7	9.7	1.5	3.4	.36	.24	.42	6.1
28	1.7	2.0	2.4	2.6	1.7	3.8	1.4	2.8	.29	.67	.36	9.6
29	1.7	2.0	3.6	2.8	1.7	2.3	1.4	2.4	.29	.66	.29	7.0
30	1.9	1.8	2.8	2.4	---	2.0	1.3	2.1	.23	.61	.29	6.1
31	1.7	---	2.8	2.3	---	1.8	---	1.9	---	.38	.29	---
TOTAL	61.4	77.4	72.2	82.3	54.6	60.1	52.7	162.6	22.75	8.13	49.15	210.69
MEAN	1.98	2.58	2.33	2.65	1.88	1.94	1.76	5.25	.76	.26	1.59	7.02
MAX	2.6	14	3.6	4.2	2.6	9.7	2.6	38	1.8	1.0	17	33
MIN	1.7	1.5	1.8	2.3	1.7	1.4	1.3	1.2	.23	.08	.09	.23
CFSM	.05	.06	.05	.06	.04	.05	.04	.12	.02	.006	.04	.16
IN.	.05	.07	.06	.07	.05	.05	.05	.14	.02	.01	.04	.18
AC-FT	122	154	143	163	108	119	105	323	45	16	97	418

CAL YR 1979 TOTAL 9750.70 MEAN 26.7 MAX 462 MIN 1.5 CFSM .62 IN 8.42 AC-FT 19340
WTR YR 1980 TOTAL 914.02 MEAN 2.50 MAX 38 MIN .08 CFSM .06 IN .79 AC-FT 1810

08201500 SECO CREEK AT MILLER RANCH NEAR UTOPIA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
JAN 08...	1135	2.6	417	8.5	12.0	0	.20	10.2	98	.8
MAY 14...	1155	3.6	381	8.2	20.5	0	2.5	8.0	92	1.4
JUL 31...	1327	.29	397	8.5	34.5	0	1.7	9.0	131	1.3

DATE	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
JAN 08...	>34	34	33	190	50	58	12	7.3	.2
MAY 14...	1500	K330	250	180	60	52	11	7.0	.2
JUL 31...	0	K450	30	170	86	47	13	9.6	.3

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)
JAN 08...	.9	170	3	52	13	.3	9.3	240	4
MAY 14...	1.2	140	0	61	12	.2	10	223	8
JUL 31...	1.6	100	2	76	17	.4	13	229	<1

DATE	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
JAN 08...	3	.59	.02	.61	.01	.40	.41	.000	2.5
MAY 14...	2	71	.01	71	.03	.51	.54	.010	1.6
JUL 31...	0	.20	.01	.21	.05	.85	.90	.010	4.7

DATE	TIME	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
JAN 08...	1135	0	20	<1	0	0	<10
JUL 31...	1327	1	30	<1	0	0	<10

DATE	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
JAN 08...	0	<1	.2	1	0	<3
JUL 31...	1	2	.0	0	0	<3

08201500 SECO CREEK AT MILLER RANCH NEAR UTOPIA, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JAN									
08...	1135	.0	.00	.00	.0	.00	.00	.00	.00
JUL									
31...	1327	.0	.00	.00	.0	.00	.00	.00	.00

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JAN									
08...	.00	.00	.00	.00	--	.00	.00	.00	.00
JUL									
31...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN									
08...	.00	.00	.00	.00	0	.00	.00	.00	.00
JUL									
31...	.00	.00	.00	.00	0	.00	.00	.00	.00

08202700 SECO CREEK AT ROWE RANCH NEAR D'HANIS, TX

LOCATION.--Lat 29°21'43", long 99°17'05", Medina County, Hydrologic Unit 12110107, on left bank 2.9 mi (4.7 km) north of D'Hanis and 8.0 mi (12.9 km) downstream from Rocky Creek.

DRAINAGE AREA.--168 mi² (435 km²).

PERIOD OF RECORD.--November 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 900.88 ft (274.588 m) National Geodetic Vertical Datum of 1929. Prior to October 1970, published as "at Crook Ranch, near D'Hanis".

REMARKS.--Records good. All of low flow of Seco Creek enters Edwards and associated limestones in the Balcones Fault Zone, which crosses basin between Miller Ranch (station 08201500) and this station. No known diversion above station. An observation of water temperature was made during the year.

AVERAGE DISCHARGE.--19 years (water years 1962-80), 8.88 ft³/s (0.251 m³/s), 6,430 acre-ft/yr (7.93 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,500 ft³/s (864 m³/s) July 15, 1973, gage height, 26.0 ft (7.92 m), from floodmark, from rating curve extended above 16,000 ft³/s (453 m³/s) on the basis of slope-area measurement of 35,800 ft³/s (1,010 m³/s); no flow most of time each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1852, 35.7 ft (10.88 m) May 31, 1935, from information by local resident. Other floods occurred Aug. 31, 1894, 33 ft (10.1 m); September 1919, 28 ft (8.5 m); July 2, 1932, 28.2 ft (8.60 m), discharge 35,800 ft³/s (1,010 m³/s), by slope-area measurement; June 17, 1958, 32.4 ft (9.88 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,400 ft³/s (351 m³/s) Sept. 7, gage height, 17.72 ft (5.401 m), from floodmark, no other peak above base of 600 ft³/s (17.0 m³/s); no flow most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1740
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	13
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.60
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.28
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1753.98
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	58.5
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1740
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3480

CAL YR 1979 TOTAL 6491.35 MEAN 17.8 MAX 3190 MIN .00 AC-FT 12880
WTR YR 1980 TOTAL 1753.98 MEAN 4.79 MAX 1740 MIN .00 AC-FT 3480

08205500 FRIO RIVER NEAR DERBY, TX

LOCATION.--Lat 28°44'11", long 99°08'40", Frio County, Hydrologic Unit 12110106, on right bank 17 ft (5 m) downstream from centerline of railroad tracks, 35 ft (11 m) right of the Missouri Pacific Railroad Co. bridge abutment, 167 ft (51 m) downstream from Interstate Highway 35, 917 ft (280 m) downstream from Leona River, 2.5 mi (4.0 km) south of Derby, and 122.4 mi (196.9 km) upstream from mouth.

DRAINAGE AREA.--3,493 mi² (9,047 km²).

PERIOD OF RECORD.--August 1915 to current year.

REVISED RECORDS.--WSP 568: 1915-16, 1918-22. WSP 763: Drainage area. WSP 1312: 1917-18(M). WSP 1923: 1954.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 449.11 ft (136.889 m) National Geodetic Vertical Datum of 1929. Aug. 1, 1915, to Apr. 21, 1931, nonrecording gage, and Apr. 22, 1931, to Mar. 6, 1940, water-stage recorder at same site and datum. Mar. 7, 1940, to May 4, 1972, water-stage recorder, and May 5 to Nov. 1, 1972, nonrecording gage at site 167 ft (51 m) upstream at same datum.

REMARKS.--Records good. Part of flow of Frio River and its headwater tributaries enters the Edwards and associated limestones in the Balcones Fault Zone upstream from U.S. Highway 90 (see REMARKS for stations 08197500, 08198500, 08200700, and 08202700). Considerable loss of flow into various permeable formations occurs downstream from the Balcones Fault Zone. Many small diversions for irrigation above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--65 years, 138 ft³/s (3.908 m³/s), 99,980 acre-ft/yr (123 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 230,000 ft³/s (6,510 m³/s) July 4, 1932, gage height, 29.45 ft (8.976 m), from floodmarks, from rating curve extended above 76,000 ft³/s (2,150 m³/s) on basis of slope-area measurement of peak flow; no flow at times most years.
Maximum stage since at least 1860, that of July 4, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,100 ft³/s (31.2 m³/s) and maximum (*):

Date		Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May	15	2400	*6,740	191	10.08	3.072
May	26	unknown	a1,900	54	-	-
Aug.	12	2400	3,120	88.4	7.56	2.304
Sept.	9	2300	6,100	173	9.78	2.981

a Estimated.

Minimum discharge, no flow July 11 to Aug. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	20	43	67	37	13	24	5.6	70	.30	.00	.63
2	24	20	42	59	35	11	24	4.6	55	.30	.00	.50
3	24	23	45	57	31	11	23	3.8	45	.20	.00	.43
4	25	21	46	56	31	14	20	3.2	40	.20	.00	.42
5	25	23	49	55	31	13	18	2.7	36	.10	.00	.43
6	24	27	48	54	32	11	17	1.9	33	.10	.00	.50
7	23	28	45	55	35	11	17	1.7	31	.10	.00	.81
8	23	31	47	55	35	15	16	2.0	28	.10	.00	354
9	26	29	48	55	30	18	14	1.3	26	.05	.00	3690
10	28	30	49	57	29	22	14	1.5	23	.05	.00	4390
11	28	31	50	57	27	22	15	1.9	21	.00	205	960
12	28	30	50	57	26	18	16	20	20	.00	2250	351
13	30	28	51	55	28	15	14	28	18	.00	1710	200
14	28	27	51	54	28	15	10	25	17	.00	380	128
15	28	28	54	53	29	16	8.3	2380	16	.00	274	87
16	28	31	54	53	29	16	6.6	5010	14	.00	97	65
17	29	33	54	53	28	15	5.8	1470	13	.00	44	55
18	27	33	54	51	27	14	6.4	766	12	.00	25	45
19	25	37	53	51	25	14	7.7	800	10	.00	15	39
20	24	42	53	49	24	15	6.9	450	9.2	.00	9.6	33
21	22	43	53	46	25	13	5.8	120	8.0	.00	6.0	28
22	23	39	55	46	26	13	5.8	85	6.8	.00	4.1	25
23	23	42	55	48	24	15	5.8	55	5.0	.00	3.1	21
24	21	39	54	48	23	15	5.3	40	3.0	.00	2.7	20
25	24	41	53	48	20	16	4.6	30	2.5	.00	1.7	20
26	27	43	50	46	17	16	3.5	1900	1.8	.00	1.3	16
27	25	44	50	43	15	16	3.1	1200	1.1	.00	.87	15
28	28	46	52	40	15	20	3.1	1000	.70	.00	.90	18
29	27	46	57	40	15	21	3.5	760	.50	.00	.79	18
30	28	45	62	40	---	19	3.2	280	.40	.00	.79	389
31	27	---	67	39	---	22	---	150	---	.00	.69	---
TOTAL	799	1000	1594	1587	777	485	327.4	16599.2	567.00	1.50	5032.54	10970.72
MEAN	25.8	33.3	51.4	51.2	26.8	15.6	10.9	535	18.9	.048	162	366
MAX	30	46	67	67	37	22	24	5010	70	.30	2250	4390
MIN	21	20	42	39	15	11	3.1	1.3	.40	.00	.00	.42
AC-FT	1580	1980	3160	3150	1540	962	649	32920	1120	3.0	9980	21760

CAL YR 1979 TOTAL 83226.00 MEAN 228 MAX 7680 MIN 20 AC-FT 165100
WTR YR 1980 TOTAL 39740.36 MEAN 109 MAX 5010 MIN .00 AC-FT 78820

08206600 FRIO RIVER AT TILDEN, TX

LOCATION.--Lat 28°28'02", long 98°32'50", McMullen County, Hydrologic Unit 12110108, on left end at downstream side of bridge on State Highway 16 in Tilden, 300 ft (91 m) downstream from Leoncita Creek, 1.3 mi (2.1 km) upstream from Salt Branch, 1.8 mi (2.9 km) downstream from Big Slough, and 44.2 mi (71.1 km) upstream from mouth.

DRAINAGE AREA.--4,493 mi² (11,637 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 216.04 ft (65.849 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Part of flow of Frio River and its headwater tributaries enter the Edwards and associated limestones in the Balcones Fault Zone, which crosses basin upstream from U.S. Highway 90 (see REMARKS for station 08205500). Considerable loss of flow into various permeable formations also occurs downstream from the Balcones Fault Zone. Many small diversions above station for irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,600 ft³/s (357 m³/s) May 19, 1980, at 0900 hours, gage height, 26.35 ft (8.031 m); minimum daily, 0.04 ft³/s (0.001 m³/s) July 21, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1932 reached a stage of 38.44 ft (11.72 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42.5 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 19	0900	*12,600	357	26.35	8.031
Aug. 11	1500	5,410	153	22.52	6.864
Sept. 14	1200	2,710	76.7	19.64	5.986

Minimum daily discharge, 0.04 ft³/s (0.001 m³/s) July 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	20	41	58	40	16	16	1.8	1350	2.0	3.8	2.4
2	24	19	44	61	40	14	18	1.8	787	1.8	2.1	1.3
3	25	18	43	66	40	13	18	1.4	229	1.4	1.2	.79
4	25	17	43	66	38	12	17	1.2	99	1.1	.74	.60
5	23	15	41	60	36	12	16	1.6	67	.86	.49	.58
6	19	13	42	57	32	11	16	1.4	54	.72	.32	.49
7	19	13	42	56	31	9.4	15	1.1	48	.45	.26	.72
8	19	17	46	55	31	8.1	13	1.1	42	.35	.23	75
9	21	18	49	54	30	8.3	12	1.1	38	.65	.26	227
10	20	18	46	55	30	8.9	11	.91	34	.59	92	47
11	18	19	46	55	32	8.0	9.7	1.3	30	.53	3850	284
12	18	20	48	56	31	7.6	9.0	2.0	30	.45	5020	586
13	18	22	52	57	27	10	8.2	3.6	30	.32	3370	1260
14	18	24	53	57	26	14	8.1	3.3	28	.23	1670	2550
15	17	25	55	57	26	15	7.1	18	25	.20	1060	1760
16	20	26	52	56	26	14	5.7	548	22	.20	1270	534
17	20	25	51	54	26	12	5.6	910	21	.23	1290	100
18	21	23	51	53	27	11	4.9	5480	18	.17	479	71
19	19	25	52	53	29	11	3.8	11900	16	.09	89	56
20	18	29	52	56	30	13	3.3	7170	13	.08	51	46
21	18	31	53	56	30	12	2.7	2940	11	.04	32	38
22	17	32	53	56	29	9.8	2.6	1890	9.8	.23	21	32
23	16	37	52	53	26	9.5	2.6	1240	8.7	.11	14	27
24	16	40	53	50	23	9.2	2.4	502	7.0	.11	9.7	22
25	15	38	55	49	21	10	1.9	120	6.6	.11	6.5	19
26	14	37	56	48	21	11	1.4	82	5.9	.26	4.5	16
27	18	40	56	46	20	11	1.4	324	5.4	5.7	3.6	17
28	18	37	55	46	20	13	1.8	584	4.6	3.5	2.9	14
29	17	36	54	46	18	15	1.8	703	3.8	2.1	2.8	12
30	19	37	54	44	---	16	1.7	792	2.5	1.3	2.2	12
31	19	---	55	42	---	15	---	1080	---	5.9	2.7	---
TOTAL	593	771	1545	1678	836	359.8	237.7	36306.61	3046.3	31.78	18352.30	7811.88
MEAN	19.1	25.7	49.8	54.1	28.8	11.6	7.92	1171	102	1.03	592	260
MAX	25	40	56	66	40	16	18	11900	1350	5.9	5020	2550
MIN	14	13	41	42	18	7.6	1.4	.91	2.5	.04	.23	.49
AC-FT	1180	1530	3060	3330	1660	714	471	72010	6040	63	36400	15490

CAL YR 1979 TOTAL 72206.00 MEAN 198 MAX 6400 MIN 13 AC-FT 143200
WTR YR 1980 TOTAL 71569.37 MEAN 196 MAX 11900 MIN .04 AC-FT 142000

08206600 FRIO RIVER AT TILDEN, TX--Continued

WATER-QUALITY RECORDS

LOCATION.--Lat 28°28'02", long 98°32'50", McMullin County, Hydrologic Unit 12110108, at left downstream end of State Highway 16 bridge in Tilden, 300 ft (91 m) downstream from Leoncita Creek, 1.3 mi (2.1 km) upstream from Salt Branch, and 1.8 mi (2.9 km) downstream from Big Slough.

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: July 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)
OCT 18...	1319	20	1880	8.0	25.0	5	33	6.9	83	1.8	470	270
NOV 21...	1153	32	1810	8.2	21.0	5	41	7.2	81	1.8	520	310
DEC 20...	1328	54	1650	8.2	10.5	5	33	10.6	94	1.5	490	290
JAN 22...	1021	57	1520	8.2	15.5	5	56	9.0	90	1.0	430	220
FEB 22...	1142	28	1760	8.1	17.0	0	34	9.1	94	1.2	480	280
MAR 27...	1752	9.9	2250	8.1	18.0	10	31	7.4	79	2.1	480	230
APR 23...	1747	2.7	2710	8.0	22.5	5	44	7.2	83	1.2	440	91
MAY 26...	1400	84	608	8.0	28.0	40	84	5.9	76	1.9	180	43
JUN 26...	1154	5.4	2030	8.1	29.0	20	25	5.5	71	1.6	450	210
JUL 28...	1645	3.6	3000	--	30.0	20	14	7.8	104	2.1	450	220
AUG 29...	1116	2.8	863	7.9	27.5	25	26	5.6	70	1.2	190	0
SEP 09...	1746	195	288	7.8	28.5	100	160	5.4	69	3.1	83	0
09...	1751	195	--	--	28.5	90	140	--	--	--	--	--

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
OCT 18...	130	35	220	4.4	4.6	240	0	290	310	.4	9.5
NOV 21...	150	35	210	4.0	4.2	250	0	280	320	.3	10
DEC 20...	150	29	140	2.7	3.4	250	0	250	270	.2	12
JAN 22...	130	25	140	2.9	2.9	250	0	230	220	.3	12
FEB 22...	140	32	190	3.8	3.2	240	0	230	320	.3	10
MAR 27...	130	37	300	6.0	4.7	300	0	250	450	.5	6.8
APR 23...	110	41	420	8.7	5.7	430	0	300	520	.7	12
MAY 26...	59	8.5	48	1.5	7.5	170	0	49	67	.1	15
JUN 26...	130	31	240	4.9	8.1	300	0	220	350	.5	9.5
JUL 28...	120	37	490	10	11	285	0	320	680	.6	26
AUG 29...	62	9.6	100	3.1	8.0	240	0	68	120	.3	14
SEP 09...	29	2.6	20	1.0	8.1	110	0	32	12	.2	18
09...	--	--	--	--	--	--	--	--	--	--	--

08206600 FRIO RIVER AT TILDEN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 18...	1120	55	10	1.1	.02	1.1	.06	.84	.90	.080	9.3
NOV 21...	1130	73	15	.97	.00	.97	.00	--	--	.070	6.1
DEC 20...	978	56	22	4.5	.02	4.5	.00	.83	.83	.110	6.0
JAN 22...	884	70	14	1.1	.02	1.1	.02	.98	1.0	.080	3.5
FEB 22...	1040	62	15	1.2	.01	1.2	.01	.39	.40	.020	9.8
MAR 27...	1330	50	14	.56	.01	.57	.12	.60	.72	.060	5.5
APR 23...	1620	65	25	.48	.00	.48	.10	1.4	1.5	.050	7.4
MAY 26...	338	170	6	.41	.03	.44	.10	1.0	1.1	.010	17
JUN 26...	1140	47	17	.19	.01	.20	.06	.47	.53	.830	9.2
JUL 28...	1830	22	5	.07	.02	.09	.08	1.0	1.1	.070	12
AUG 29...	500	25	12	.12	.01	.13	.02	.95	.97	.110	10
SEP 09...	176	408	54	.43	.04	.47	.03	1.4	1.4	.420	17
09...	--	365	28	.54	.04	.58	.03	1.6	1.6	.470	--

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 18...	1319	1	300	0	0	0	10
JAN 22...	1021	1	80	1	0	0	10
APR 23...	1747	1	200	0	0	3	10
JUL 28...	1645	4	200	0	0	3	40

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 18...	0	10	.0	1	0	0
JAN 22...	2	3	.2	1	0	7
APR 23...	3	10	.0	0	3	10
JUL 28...	2	10	.0	0	0	10

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
NOV 21...	1153	.0	9	.00	.00	.0	.0	0	.00	.0
JAN 22...	1021	.0	0	.00	.00	.0	.0	0	.00	.0
JUL 28...	1645	.0	0	.00	.00	.0	.0	0	.00	.0

08206600 FRIO RIVER AT TILDEN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
NOV										
21...	.00	.0	.00	.0	.00	.00	.0	.00	.00	.0
JAN										
22...	.00	.0	.00	.0	.00	.00	.0	.00	.00	.0
JUL										
28...	.00	.1	.00	.0	.00	.00	.0	.00	.00	.0

DATE	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	MALA-THION, TOTAL (UG/L)	METHO-XY-CHLOR, TOTAL (UG/L)	METHO-XY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)
NOV										
21...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0
JAN										
22...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0
JUL										
28...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
NOV										
21...	.00	.00	.00	.00	0	0	.00	.00	.00	.00
JAN										
22...	.00	.00	.00	.00	0	0	.00	.00	.00	.00
JUL										
28...	.00	.00	.00	.00	0	0	.00	.00	.00	.00

08206700 SAN MIGUEL CREEK NEAR TILDEN, TX

LOCATION.--Lat 28°35'14", long 98°32'44", McMullen County, Hydrologic Unit 12110109, on left bank 25 ft (8 m) downstream from State Highway 16, 0.3 mi (0.5 km) upstream from mouth of Bruce Branch, 0.9 mi (1.4 km) downstream from mouth of Far Live Oak Creek, 3 mi (5 km) upstream from San Patricio Creek, 7 mi (11 km) downstream from Clear Creek, 8.7 mi (14.0 km) north of Tilden, and 13 mi (21 km) upstream from mouth.

DRAINAGE AREA.--793 mi² (2,054 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1964 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 242.95 ft (74.051 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. There are five diversions above station, but amounts are unknown. At times, excess water from Bexar-Medina-Atascosa Counties Water Improvement District No. 1 system enters San Miguel Creek basin via Chacon Creek 52 mi (84 km) upstream (amounts unknown).

AVERAGE DISCHARGE.--16 years, 71.2 ft³/s (2.016 m³/s), 51,580 acre-ft/yr (63.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,600 ft³/s (583 m³/s) May 16, 1980, gage height, 27.31 ft (8.324 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1919, 32.6 ft (9.94 m) in 1942; stage of 1919 flood not known, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 900 ft³/s (25.5 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 16	1000	*20,600	583	27.31	8.324
Aug. 12	0100	9,940	282	22.62	6.895

Minimum discharge, no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	1.2	.69	.01	1.3	18	.00	20	3.8	.69	13
2	.00	.00	1.3	.72	1.4	1.3	13	.00	18	3.2	.10	11
3	.00	.00	1.3	.50	1.3	1.2	8.3	.00	17	2.9	.10	16
4	.00	.00	1.2	.50	1.2	1.3	6.7	.00	16	2.8	.06	11
5	.00	.00	1.4	.63	1.2	1.3	7.0	.00	15	2.7	.06	9.8
6	.00	.00	1.4	2.0	1.2	1.2	5.6	.00	16	2.6	.04	9.3
7	.00	.00	1.1	3.0	1.1	1.1	4.6	.00	13	2.4	.04	12
8	.00	.00	1.1	3.1	1.1	1.1	4.5	20	13	2.4	.06	200
9	.00	.00	1.3	2.3	1.1	1.9	3.6	25	11	2.2	.06	103
10	.00	.00	1.4	2.2	1.0	2.6	2.6	9.5	11	2.1	210	62
11	.00	.00	1.4	1.0	1.0	3.3	1.8	31	10	1.9	7600	20
12	.00	.00	1.6	1.3	.93	2.7	1.3	35	9.1	1.8	8100	16
13	.00	.00	2.3	1.3	1.3	2.0	1.6	17	8.7	1.6	3330	13
14	.00	.00	1.9	1.1	2.0	[illegible]	1.6	111	8.1	1.6	1230	12
15	.00	.00	1.9	.99	1.9	3.0	1.0	202	8.0	1.6	130	10
16	.00	.00	1.3	.86	1.6	3.6	.77	16700	7.5	1.2	81	9.0
17	.00	.00	1.2	.80	1.3	2.9	.60	8170	7.6	1.1	36	7.8
18	.00	.00	1.1	.50	1.4	2.1	.36	860	7.2	.69	47	7.3
19	.00	.00	1.0	.63	1.7	1.7	.30	370	6.8	.60	30	6.8
20	.00	.00	1.1	1.0	1.6	1.5	.30	300	6.3	.52	26	6.3
21	.00	.00	[illegible]	.10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.60	[illegible]	[illegible]
22	.00	.00	[illegible]	.80	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	.00	.00	[illegible]	[illegible]	[illegible]	[illegible]	.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	.00	.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.00	[illegible]	[illegible]
28	.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	.00	[illegible]	[illegible]	[illegible]	---	[illegible]	.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	.00	---	[illegible]	[illegible]	---	[illegible]	---	[illegible]	---	[illegible]	[illegible]	---
TOTAL	.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MEAN	.000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAX	.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MIN	.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AC-FT	.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CAL YR 1979 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] AC-FT [illegible]
WTR YR 1980 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN .00 AC-FT [illegible]

08206700 SAN MIGUEL CREEK NEAR TILDEN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: July 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)
OCT										
18...	1435	.00	--	--	--	--	--	--	--	--
NOV										
21...	1037	.00	--	--	--	--	--	--	--	--
DEC										
20...	1435	.52	2900	7.8	18.0	35	10	6.0	64	4.1
JAN										
22...	1354	.31	2030	7.8	15.5	15	8.2	6.6	66	1.6
FEB										
22...	1256	.51	2260	8.0	19.5	10	8.8	8.7	95	1.6
MAR										
27...	1842	2.6	2030	7.8	18.0	15	12	5.9	63	2.4
APR										
23..	1830	.05	1290	8.0	23.0	10	9.2	6.9	80	7.8
MAY										
16...	1235	20100	--	--	--	--	--	--	--	--
17...	1430	5140	--	--	25.5	--	--	--	--	--
26...	1260	38	1960	7.6	25.0	20	20	5.7	70	1.6
27...	--	35	--	--	--	--	--	--	--	--
JUN										
26...	1232	4.3	2900	7.7	29.0	15	4.8	4.8	62	1.8
JUL										
28...	1605	.67	3050	--	31.5	10	3.2	8.2	110	1.8
AUG										
29...	1220	21	2700	7.7	27.0	5	3.1	7.2	90	1.0
SEP										
09...	1348	102	819	7.5	26.5	45	66	5.7	70	3.5
09...	1353	102	--	--	26.5	60	70	--	--	--

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)
OCT									
18...	--	--	--	--	--	--	--	--	--
NOV									
21...	--	--	--	--	--	--	--	--	--
DEC									
20...	860	580	230	70	300	4.4	20	350	0
JAN									
22...	560	320	150	43	220	4.0	11	290	0
FEB									
22...	630	400	170	51	270	4.7	10	280	0
MAR									
27...	580	350	150	49	230	4.2	9.6	270	0
APR									
23...	400	200	110	30	120	2.6	11	240	0
MAY									
16...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
26...	530	300	160	[illegible]	[illegible]	[illegible]	9.6	310	0
27...	--	--	--	--	--	--	--	--	--
JUN									
26...	610	310	200	27	320	4.8	11	370	0
JUL									
28...	720	310	210	[illegible]	[illegible]	4.5	13	[illegible]	0
AUG									
29...	610	[illegible]	[illegible]	40	[illegible]	4.6	11	[illegible]	0
SEP									
09...	200	100	65	12	35	2.0	8.4	110	0
09...	--	--	--	--	--	--	--	--	--

08206700 SAN MIGUEL CREEK NEAR TILDEN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)
OCT									
18...	--	--	--	--	--	--	--	--	--
NOV									
21...	--	--	--	--	--	--	--	--	--
DEC									
20...	610	480	.4	17	1900	14	9	.04	.000
JAN									
22...	410	290	.3	11	1280	9	5	.00	.020
FEB									
22...	430	380	.4	6.2	1460	16	3	.09	.010
MAR									
27...	390	340	.4	5.3	1270	33	10	.00	.010
APR									
23...	200	190	.4	6.4	786	22	9	.03	.000
MAY									
16...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
20...	330	280	.2	21	1190	67	11	.68	.050
27...	--	--	--	--	--	--	--	--	--
JUN									
[illegible]...	500	470	.4	11	1780	21	7	.16	.010
JUL									
28...	600	570	.5	7.0	1990	4	3	.01	.010
AUG									
29...	510	480	.4	13	1800	39	7	.15	.010
SEP									
09...	170	100	.2	9.4	495	158	18	.29	.030
09...	--	--	--	--	--	87	8	.13	.010

DATE	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT									
18...	--	--	--	--	--	--	--	--	--
NOV									
21...	--	--	--	--	--	--	--	--	--
DEC									
20...	.04	.000	1.2	1.2	.070	13	--	--	--
JAN									
22...	.02	.010	.66	.67	.080	14	--	--	--
FEB									
22...	.10	.010	1.6	1.6	.030	9.2	--	--	--
MAR									
27...	.01	.060	1.7	1.8	.070	--	--	--	--
APR									
23...	.03	.330	1.8	2.1	.070	10	--	--	--
MAY									
16...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	[illegible]	[illegible]	[illegible]
20...	.73	.130	.87	.83	.270	10	[illegible]	[illegible]	[illegible]
27...	--	--	--	--	--	--	--	--	--
JUN									
[illegible]...	.10	.080	4.2	4.7	.070	11	[illegible]	[illegible]	--
JUL									
28...	.02	.080	.80	.88	.060	6.8	--	--	--
AUG									
29...	.16	.000	.70	.70	.040	7.4	--	--	--
SEP									
09...	.32	.100	1.6	1.8	.230	10	--	--	--
09...	.14	.050	1.3	1.4	.200	--	--	--	--

DATE	TIME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

08206700 SAN MIGUEL CREEK NEAR TILDEN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
DEC						
20...	0	270	.0	0	0	10
JAN						
22...	3	120	.2	0	0	10
APR						
23...	3	20	.1	0	0	3
JUL						
28...	0	70	.0	1	0	10

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	CHLOR-DANE, TOTAL (UG/L)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
JAN										
22...	1354	.0	1	.00	.00	.0	.0	0	.00	1.4
JUL										
28...	1405	.0	0	.00	.00	.0	.0	0	.00	.1

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
JAN										
22...	.00	.7	.00	.0	.00	.00	.0	.00	.00	.0
JUL										
28...	.00	2.6	.00	.1	.00	.00	.2	.00	.00	.0

DATE	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)
JAN										
22...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0
JUL										
28...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN										
22...	.00	.00	.00	.00	0	0	.00	.00	.00	.00
JUL										
28...	.00	.00	.00	.00	0	0	.00	.03	.00	.00

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]							
[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]						
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

08207000 FRIO RIVER AT CALLIHAM, TX

LOCATION.--Lat 28°29'31", long 98°20'47", McMullen County, Hydrologic Unit 12110108, on right bank at upstream side of county bridge, 0.6 mi (1.0 km) upstream from bridge on Farm Road 99, 0.8 mi (1.3 km) north of Calliham, 10.7 mi (17.2 km) downstream from San Miguel Creek, and 20.8 mi (33.5 km) upstream from mouth.

DRAINAGE AREA.--5,491 mi² (14,222 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1924 to April 1926 (monthly discharge only), April 1932 to current year.

REVISED RECORDS.--WSP 788: Drainage area. WSP 2123: 1932.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 153.47 ft (46.778 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 30, 1926, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records good. Part of flow of Frio River and its headwater tributaries enter the Edwards and associated limestones in the Balcones Fault Zone, which crosses basin upstream from U.S. Highway 90 (see REMARKS for station 08205500 Frio River near Derby). Considerable loss of flow into various permeable formations also occurs downstream from the Balcones Fault Zone. Many small diversions above station for irrigation.

AVERAGE DISCHARGE.--49 years (water years 1925, 1933-80), 247 ft³/s (6.995 m³/s), 179,000 acre-ft/yr (221 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,200 ft³/s (2,270 m³/s) July 6, 1932, gage height, 39.2 ft (11.95 m), from floodmarks, from rating curve extended above 24,000 ft³/s (680 m³/s) on basis of contracted-opening measurement and flow-over-road measurement of 42,400 ft³/s (1,200 m³/s); no flow at times.

Maximum stage since at least 1870, that of July 6, 1932, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,700 ft³/s (76.5 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 17	1800	*10,800	306	31.09	9.476
May 20	1500	8,120	230	29.32	8.937

Minimum discharge, 0.30 ft³/s (0.008 m³/s) May 2, 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	18	33	55	42	17	31	.51	1260	11	5.4	52
2	23	17	37	59	40	15	28	.35	1260	7.9	10	50
3	23	18	40	63	39	14	27	.31	585	6.8	3.6	65
4	23	16	39	66	39	13	24	.61	217	6.4	2.4	63
5	23	15	39	64	37	11	21	.50	142	6.2	2.1	37
6	21	14	37	59	36	11	21	.55	109	5.4	1.7	36
7	20	12	38	50	32	11	20	.50	93	4.7	1.4	94
8	19	11	38	50	31	10	18	1.2	83	4.5	1.3	153
9	20	14	42	54	31	8.8	15	.94	73	4.2	1.2	467
10	21	15	45	54	28	8.0	14	5.3	67	3.6	60	250
11	21	17	43	52	29	8.9	13	11	60	3.4	500	162
12	19	18	43	50	32	9.4	12	15	35	3.0	4600	516
13	19	18	45	55	31	9.2	10	27	33	2.9	4600	703
14	20	19	49	57	27	8.7	9.1	19	31	2.6	3200	1420
15	20	21	50	57	26	16	8.5	311	48	2.2	1500	2040
16	18	23	52	53	25	16	8.5	2060	47	2.0	960	1570
17	22	23	49	55	25	17	8.0	8680	42	1.8	1070	298
18	22	23	48	56	25	15	6.4	7260	37	1.7	1070	130
19	24	22	48	52	26	12	5.9	5060	36	1.5	600	98
20	19	23	49	52	27	14	5.5	7790	31	1.3	180	70
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	---	[illegible]	[illegible]	---	[illegible]	---	[illegible]	---	[illegible]	[illegible]	---
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

08207000 FRIO RIVER AT CALLIHAM, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: November 1967 to current year. Pesticide analyses: October 1974 to current year. Sediment records: October 1976 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1967 to current year.
WATER TEMPERATURES: November 1967 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 5,750 micromhos Nov. 30, 1968; minimum daily, 104 micromhos Feb. 13, 1969.
WATER TEMPERATURES: Maximum daily, 33.0°C July 17, 1971; minimum daily, 6.0°C Jan. 9, 1970, Jan. 12, 13, 1973, Jan. 15, 1979.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,990 micromhos May 9; minimum daily, 123 micromhos May 17.
WATER TEMPERATURES: Maximum daily, 32.0°C June 30, July 10; minimum daily, 9.5°C Dec. 18.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT										
31...	0830	16	2010	8.1	21.0	500	310	140	37	250
DEC										
31...	1150	52	1580	--	13.5	440	290	130	28	150
JAN										
22...	0935	57	--	--	--	--	--	--	--	--
31...	1120	47	1550	--	10.5	440	280	130	29	180
MAR										
31...	1000	22	2220	--	21.0	430	230	120	32	290
APR										
30...	0725	.94	2810	--	21.0	560	380	150	45	380
JUL										
21...	1260	1.1	--	--	--	--	--	--	--	--
31...	0950	11	2260	--	29.5	500	300	170	30	260
AUG										
31...	0745	54	1970	--	28.0	520	170	160	30	210
SEP										
15...	0600	2020	354	--	27.0	160	17	46	5.6	16

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT									
31...	4.9	5.5	240	0	300	380	.5	7.8	1250
DEC									
31...	3.1	3.6	180	0	230	270	.2	12	912
JAN									
22...	--	--	--	--	--	--	--	--	--
31...	3.7	2.9	200	0	--	--	--	12	--
MAR									
31...	6.1	6.7	240	0	260	430	.5	7.3	1250
APR									
30...	7.0	8.2	220	0	290	650	.6	7.0	1640
JUL									
21...	--	--	--	--	--	--	--	--	--
31...	5.1	12	240	0	410	380	.3	13	1470
AUG									
31...	4.0	11	300	0	200	310	.3	20	1180
SEP									
15...	.6	3.0	150	0	23	23	.3	19	210

DATE	TIME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OCT										
31...	0830	.00	0	.00	.00	.0	.0	0	.00	.0
DEC										
31...	1150	.00	0	.00	.00	.0	.0	0	.00	.0

08207000 FRIO RIVER AT CALLIHAM, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)
JAN 22...	.00	.0	.00	.0	.00	.00	.0	.00	.00	.0
JUL 21...	.00	.2	.00	.0	.00	.00	.0	.00	.00	.0

DATE	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG)
JAN 22...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0
JUL 21...	.00	.00	.0	.00	.0	.00	.0	.01	.00	.0

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 22...	.00	.00	.00	.00	0	0	.00	.00	.00	.00
JUL 21...	.00	.00	.00	.00	0	0	.00	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCTANCE (MICROMHOS)	DISSOLVED SOLIDS (MG/L)	DISSOLVED SOLIDS (TONS)	DISSOLVED CHLORIDE (MG/L)	DISSOLVED CHLORIDE (TONS)	DISSOLVED SULFATE (MG/L)	DISSOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	391	1960	1150	1860	370	391	270	423	520
NOV.	1979	683	2030	1200	2210	390	719	270	508	540
DEC.	1979	1621	1720	1010	3000	310	1200	230	892	480
JAN.	1980	1653	1580	922	4110	290	1230	210	941	430
FEB.	1980	836	1690	989	2230	300	681	230	511	480
MAR.	1980	409.2	2040	1200	1330	390	432	280	305	540
APR.	1980	326.33	2440	1430	1270	510	444	330	293	590
MAY	1980	49081.57	294	160	22300	29	3700	30	3030	100
JUNE	1980	4303	776	440	5650	133	1450	100	1260	260
JULY	1980	163.69	2210	1310	574	440	173	330	118	560
AUG.	1980	18646.1	254	202	[illegible]	40	[illegible]	46	2260	120
SEPT	1980	8700	[illegible]	[illegible]	[illegible]	40	[illegible]	77	1830	190
TOTAL		[illegible]	--	--	[illegible]	--	[illegible]	--	16400	--
WTD. AVG.		237	480	270	--	71	--	61	--	150

08207000 FRIO RIVER AT CALLIHAM, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1890	2050	1910	1630	1520	1860	2220	2830	450	2120	2290	2000
2	1900	2060	1920	1620	1570	1870	2250	2850	432	2180	2320	2030
3	1910	2080	1890	1580	1620	1890	2240	2860	775	2210	2370	2050
4	1920	2090	1880	1640	1610	1900	2310	2870	895	2240	2390	2070
5	1930	2100	1770	1610	1620	1920	2400	2880	1030	2250	2400	2100
6	1920	2110	1780	1620	1630	1940	2500	2930	1060	2270	2440	2140
7	1910	2100	1820	1610	1640	1950	2550	2970	1150	2300	2480	2050
8	1940	2090	1800	1630	1660	1960	2540	2940	1210	2320	2560	1980
9	1970	2080	1780	1640	1670	1990	2560	2990	1240	2350	2600	1080
10	2010	2090	1800	1610	1670	2010	2570	2940	1290	2320	1750	560
11	2000	2080	1740	1590	1660	2020	2580	2890	1330	2380	305	875
12	1990	2070	1740	1570	1650	2030	2580	2650	1400	2390	197	508
13	1980	2060	1720	1550	1660	2030	2570	2460	1450	2410	175	502
14	1970	2040	1690	1520	1680	2040	2560	2510	1490	2430	208	354
15	1980	2030	1700	1540	1690	2020	2530	2030	1520	2450	294	325
16	1970	2040	1710	1530	1680	2000	2530	453	1560	2480	450	386
17	1970	2070	1700	1530	1680	1990	2520	123	1660	2500	499	520
18	1980	2070	1680	1510	1690	1970	2510	165	1720	2520	544	660
19	1960	2080	1640	1520	1700	1990	2530	352	1780	2560	743	758
20	1970	2110	1680	1530	1710	2020	2550	239	1840	2630	1000	836
21	1990	2070	1660	1540	1740	2060	2540	245	1880	2690	1240	952
22	1980	2030	1640	1550	1770	2080	2550	302	1910	2650	1350	988
23	1970	2000	1630	1540	1790	2110	2560	410	1940	2680	1470	1030
24	1960	1970	1660	1490	1810	2120	2610	416	1960	2720	1590	1080
25	1970	1940	1700	1550	1840	2160	2630	700	1990	2740	1680	1140
26	1980	1910	1680	1570	1860	2130	2650	894	2030	2780	1730	1320
27	1990	2000	1670	1600	1880	2100	2670	875	2050	2810	1800	1280
28	1980	2020	1660	1610	1870	2110	2750	692	2090	2840	1860	1480
29	1970	1980	1670	1630	1850	2190	2790	663	2100	2880	1900	1430
30	1980	1890	1640	1610	---	2200	2810	462	2110	1940	1960	1390
31	2010	---	1610	1580	---	2240	---	686	---	2260	1990	---
MEAN	1960	2040	1730	1580	1700	2030	2540	1590	1510	2460	1500	1200

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.5	19.0	11.0	12.5	10.0	---	21.0	---	---	31.0	28.0	28.5
2	27.5	16.5	10.0	12.0	---	12.0	22.0	22.5	28.5	30.0	28.5	28.0
3	27.0	17.5	11.0	13.0	11.0	---	22.5	22.5	---	---	29.0	29.0
4	24.5	---	11.5	11.0	11.0	13.0	21.0	22.5	28.0	29.5	---	28.0
5	22.0	---	13.0	13.5	12.0	16.0	---	22.5	27.0	29.0	28.5	28.5
6	---	19.0	13.0	14.0	13.5	18.0	---	26.0	28.0	28.0	29.0	---
7	24.5	18.0	14.0	12.0	14.0	18.0	22.0	23.0	29.0	---	28.5	---
8	26.0	17.5	---	11.0	16.0	19.0	24.0	23.5	29.0	30.0	29.5	27.5
9	25.0	19.0	15.0	12.0	11.5	---	22.5	21.5	28.5	30.0	---	27.5
10	24.0	18.5	15.5	14.0	12.0	18.0	---	---	---	32.0	---	27.0
11	23.0	18.0	17.0	16.0	10.5	---	23.0	25.0	27.5	31.0	25.0	27.5
12	24.0	15.5	16.0	12.5	---	22.0	21.0	26.0	---	30.0	25.0	26.0
13	24.0	15.0	13.5	---	12.0	20.5	17.0	27.0	29.0	---	27.0	26.5
14	---	15.0	13.0	12.0	13.0	18.0	18.5	26.0	27.0	29.5	30.0	29.0
15	25.5	---	---	16.0	14.5	19.0	16.0	24.5	28.0	29.0	28.0	27.0
16	26.5	14.0	16.0	16.0	14.0	22.0	---	22.5	28.5	29.0	---	27.0
17	25.0	16.0	10.5	17.0	---	18.5	19.5	23.0	29.0	---	29.0	---
18	---	---	9.5	15.0	14.0	18.5	20.5	24.0	30.5	28.0	28.5	27.5
19	26.0	18.0	11.0	17.5	16.0	18.0	---	24.0	---	29.5	29.0	27.5
20	---	21.0	11.5	---	18.5	19.5	22.0	24.0	---	---	---	28.0
21	---	19.0	13.5	17.0	18.5	20.0	21.0	24.0	31.0	30.5	29.5	29.0
22	25.0	---	16.0	15.5	18.0	19.5	19.0	25.5	---	29.0	28.0	27.0
23	22.0	15.5	---	16.0	19.0	22.0	21.0	---	29.0	29.5	28.0	28.0
24	20.0	---	---	15.5	16.5	19.5	24.0	26.0	---	30.0	---	---
25	19.0	12.5	12.5	13.5	20.5	21.5	22.0	---	---	29.5	29.5	28.0
26	21.5	12.5	14.0	14.0	15.0	18.5	22.5	28.0	---	29.5	27.0	27.0
27	20.0	14.5	---	---	17.5	19.0	21.5	25.0	---	---	28.0	---
28	22.0	14.0	13.0	13.0	18.0	20.0	21.0	28.0	30.0	29.0	28.0	28.0
29	---	12.0	14.0	11.0	20.0	21.0	19.5	27.5	30.0	30.0	---	28.5
30	24.0	12.0	14.5	10.5	---	---	21.0	27.0	30.0	---	28.0	29.0
31	21.0	---	13.5	10.5	---	21.0	---	27.0	---	29.5	28.0	---
MEAN	23.5	16.5	13.5	13.5	14.5	18.0	21.0	24.5	28.0	29.5	28.0	27.5

08208000 ATASCOSA RIVER AT WHITSETT, TX

LOCATION.--Lat 28°37'18", long 98°17'02", Live Oak County, Hydrologic Unit 12110110, on right bank 1,000 ft (305 m) upstream from bridge on Farm Road 99, 1.1 mi (1.8 km) southwest of Whitsett, 3.9 mi (6.3 km) downstream from La Parita Creek, and 13.1 mi (21.1 km) upstream from mouth.

DRAINAGE AREA.--1,171 mi² (3,033 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1924 to May 1926, May 1932 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 159.04 ft (48.475 m) National Geodetic Vertical Datum of 1929. Prior to May 8, 1926, nonrecording gage at bridge 1,200 ft (366 m) downstream at datum 1.38 ft (0.421 m) higher.

REMARKS.--Water-discharge records good. Considerable loss of flow into various permeable formations occurs upstream from this station. Records from the Lower Nueces River Water Supply District indicate that during the current year the Campbellton water wells discharged 42.1 acre-ft (51,900 m³) into the Atascosa River 12 mi (19 km) upstream from this station. There are several small diversions above station.

AVERAGE DISCHARGE.--49 years (water years 1925, 1933-80), 137 ft³/s (3.880 m³/s), 99,260 acre-ft/yr (122 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 121,000 ft³/s (3,430 m³/s) Sept. 23, 1967, gage height, 41.3 ft (12.59 m), from floodmark, from rating curve extended above 24,000 ft³/s (680 m³/s) on basis of slope-area measurement of peak flow; no flow at times.

Maximum stage since at least 1881, that of Sept. 23, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Second highest stage, 41 ft (12.5 m), discharge 106,000 ft³/s (3,000 m³/s), occurred in September 1919.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42.5 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 16	2400	*20,700	586	a33.49	10.208
May 20	1500	3,850	109	23.47	7.154
Aug. 12	1400	15,700	445	a32.29	9.842

a From floodmark.

Minimum discharge, 0.63 ft³/s (0.018 m³/s) Aug. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	1.5	4.2	30	6.7	5.7	6.6	2.1	31	4.1	6.3	21
2	3.4	1.5	3.9	17	7.1	5.5	5.6	5.1	28	4.1	3.5	19
3	3.3	1.6	4.3	12	8.0	5.4	4.8	4.4	27	4.3	2.2	18
4	2.8	1.7	4.2	9.4	8.0	5.6	7.0	3.8	25	4.0	1.4	18
5	2.3	1.8	4.1	8.2	7.9	6.0	5.9	8.4	24	3.7	1.0	16
6	2.1	1.9	4.5	6.9	8.1	5.6	4.7	7.1	20	3.4	.83	18
7	2.0	2.0	4.7	5.7	8.1	5.6	4.0	11	22	3.4	.81	81
8	2.0	3.5	4.6	6.0	7.7	6.1	3.7	18	21	3.0	.97	276
9	1.6	3.2	3.9	5.8	7.2	6.5	6.2	42	18	3.0	.86	366
10	1.2	2.7	4.0	5.8	7.3	7.3	4.9	35	19	3.0	154	458
11	1.1	2.4	4.6	6.1	7.9	9.8	4.2	25	17	2.8	6210	290
12	1.0	2.2	4.6	5.9	8.7	8.5	3.6	16	15	2.7	12800	74
13	1.1	2.0	6.2	5.6	8.1	7.3	2.9	13	15	2.3	4630	46
14	1.1	3.0	8.8	5.6	7.7	6.7	2.6	31	16	2.0	2360	35
15	1.1	3.3	8.3	5.8	7.5	6.7	2.4	383	13	2.0	512	28
16	1.2	3.2	8.2	6.0	6.3	6.7	3.4	11100	13	2.0	135	24
17	1.5	3.5	6.8	6.3	7.6	6.2	4.0	15100	13	1.8	93	21
18	1.3	3.5	5.9	6.2	8.4	6.1	3.6	7200	12	1.7	200	19
19	1.2	3.4	5.9	6.1	7.7	5.9	3.1	1630	10	1.5	221	19
20	1.2	3.2	5.9	6.8	7.5	5.4	2.3	3280	9.1	1.5	84	17
21	1.8	3.3	5.9	8.0	7.7	5.4	1.9	1620	8.4	1.4	50	16
22	3.3	3.2	5.5	7.9	7.4	5.0	1.7	433	7.5	1.7	40	15
23	2.2	8.2	5.0	8.4	6.9	5.3	1.6	227	7.7	1.5	40	14
24	1.8	4.9	6.0	10	6.5	5.4	1.5	121	8.7	1.7	30	13
25	1.3	4.9	5.2	9.2	5.7	5.1	1.4	83	7.9	1.4	33	12
26	1.2	5.6	5.2	8.4	5.6	5.1	1.3	64	7.5	1.2	30	11
27	1.5	4.9	5.0	7.3	5.6	6.0	2.2	56	6.5	5.0	27	12
28	1.5	4.9	5.0	5.0	5.6	6.3	2.0	60	5.5	3.0	23	12
29	1.6	5.4	276	6.0	5.9	5.7	2.1	60	6.0	13	24	16
30	1.5	4.6	182	7.1	---	6.6	1.7	35	6.4	40	23	21
31	1.6	---	84	6.0	---	7.5	---	36	---	16	21	---
TOTAL	55.8	99.0	682.9	252.1	218.6	189.0	103.5	30731.0	430.0	133.0	27760.07	2087
MEAN	1.80	3.30	22.0	8.13	7.54	6.10	3.45	[illegible]	14.3	4.29	895	69.6
MAX	4.0	8.2	276	30	8.7	9.8	7.0	15100	31	40	12800	458
MIN	1.0	1.5	3.9	5.6	5.6	5.0	1.3	2.1	6.0	1.2	.81	11
AC-FT	111	196	1350	500	434	375	205	[illegible]	853	264	55060	4140

CAL YR 1979 TOTAL 27024.40 MEAN 74.0 MAX 3130 MIN 1.0 AC-FT 53600
WTR YR 1980 TOTAL 71703.27 MEAN 196 MAX 15100 MIN .81 AC-FT 142200

08208000 ATASCOSA RIVER AT WHITSETT, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Sediment records: September 1976 to September 1978, October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, WATER (DEG C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM
MAY							
16...	1452	16600	24.5	1370	61400	60	69
17...	1245	1490	23.5	650	2620	94	94
18...	0945	5760	24.0	538	8370	79	82
28...	1020	4.7	25.5	74	.94	--	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM
MAY							
16...	72	74	75	75	77	86	100
17...	96	96	98	98	99	99	100
18...	88	89	90	99	99	99	100
28...	--	--	--	--	--	--	--

08210000 NUECES RIVER NEAR THREE RIVERS, TX
(National stream-gaging accounting network)

LOCATION.--Lat 28°26'10", long 98°11'06", Live Oak County, Hydrologic Unit 12110111, on left bank 100 ft (30 m) downstream from Missouri Pacific Railroad bridge, 0.2 mi (0.3 km) downstream from Frio River, 1.7 mi (2.7 km) south of Three Rivers, and at mile 102.6 (165.1 km).

DRAINAGE AREA.--15,600 mi² (40,400 km²).

WATER-DISCHARGE RECORDS

PER OF RECORD.--July 1915 to current year. Monthly discharge only for November 1919 to January 1920, published in WSP 1312.

REVISED RECORDS.--WSP 548: 1920-21. WSP 1562: 1916, 1918-21, 1922(M), 1923, 1929.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 101.13 ft (30.824 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 5, 1932, nonrecording gage at railroad bridge 100 ft (30 m) upstream at same datum.

REMARKS.--Water-discharge records good. Part of flow of Nueces and Frio Rivers and their headwater tributaries enter the Edwards and associated limestones in the Balcones Fault Zone upstream from U.S. Highway 90 (see REMARKS for stations 08194600 and 08205500). Considerable loss of flow into various permeable formations occurs downstream from the Balcones Fault Zone. Many small diversions for irrigation and municipal supply above station. Minor upstream regulation by small reservoirs and by ground-water supplements (see station 08208000 Atascosa River at Whitsett). National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--65 years, 857 ft³/s (24.27 m³/s), 620,900 acre-ft/yr (766 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 141,000 ft³/s (3,990 m³/s) Sept. 23, 1967, gage height, 49.21 ft (14.999 m); no flow at times.

Maximum stage since about 1875, that of Sept. 23, 1967.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,000 ft³/s (170 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 18	2100	20,800	589	37.94	11.564
Aug. 13	1000	*24,400	691	39.46	12.027

Minimum daily discharge, 1.2 ft³/s (0.034 m³/s) Apr. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	14	41	103	46	23	23	1.9	1260	21	32	211
2	30	17	39	79	45	22	36	3.4	1780	13	13	268
3	26	17	47	72	45	20	[illegible]	5.0	1550	13	8.1	173
4	23	18	47	72	45	17	30	4.0	1110	12	6.5	119
5	22	16	49	72	45	15	26	2.7	1090	13	5.1	94
6	22	13	44	68	44	14	26	3.3	1160	12	4.1	79
7	22	12	45	64	42	13	26	6.0	1270	11	3.0	813
8	19	10	47	58	41	12	23	12	1480	9.6	2.5	2000
9	15	8.6	46	57	38	12	17	85	1750	8.2	2.4	698
10	16	9.1	50	57	37	13	15	71	2030	7.2	897	1600
11	17	12	51	59	37	12	14	43	2160	7.2	14900	1320
12	16	14	50	56	38	15	14	36	617	6.5	22100	738
13	13	14	50	56	42	15	14	27	181	6.0	23900	765
14	14	15	54	59	40	14	12	38	138	4.5	20900	1050
15	14	18	58	59	37	17	10	428	121	4.1	16200	1750
16	14	24	58	60	38	14	9.7	3960	106	3.3	11600	2020
17	13	23	57	61	33	23	7.8	9470	92	2.8	12800	876
18	15	30	53	61	33	26	9.3	18800	80	2.9	12700	215
19	16	29	54	60	33	20	8.4	18300	72	2.3	8560	144
20	17	27	55	130	36	19	7.3	14200	66	2.3	5160	127
21	12	28	55	665	38	15	6.6	14600	57	2.2	3350	110
22	12	32	52	67	38	16	5.5	13400	51	1.9	2520	93
23	13	36	57	59	38	16	4.6	8690	45	2.2	[illegible]	83
24	16	39	57	57	38	14	3.0	4280	41	4.3	1060	76
25	13	45	57	55	33	13	2.9	2300	39	3.6	331	67
26	12	47	56	51	31	15	1.6	1960	35	2.7	220	66
27	13	45	57	50	26	26	1.2	2180	33	2.5	180	111
28	13	42	59	49	23	28	1.5	2370	24	1.9	151	81
29	14	41	60	50	23	26	1.3	1760	21	1.9	136	66
30	16	41	361	49	---	20	1.6	803	20	13	120	60
31	16	---	150	49	---	19	---	1030	---	80	105	---
TOTAL	526	724.7	2012	2564	1077	541	392.2	110269.3	10477	283.1	160132.7	15039
MEAN	17.0	24.5	64.9	82.7	37.1	17.5	13.1	[illegible]	[illegible]	[illegible]	5166	[illegible]
MAX	30	47	361	665	46	28	36	18800	2160	80	23900	2020
MIN	12	8.6	39	49	23	12	1.2	1.9	20	1.9	2.4	60
AC-FT	1040	1440	3990	5090	2140	1070	778	[illegible]	[illegible]	[illegible]	317600	[illegible]

CAL YR 1979 TOTAL 182176.7 MEAN 499 MAX 7190 MIN 8.6 AC-FT 361300
WTR YR 1980 TOTAL 320821.0 MEAN 877 MAX 23900 MIN 1.2 AC-FT 636400

08210000 NUECES RIVER NEAR THREE RIVERS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1941 to September 1947, September 1950 to September 1952. Chemical, biochemical, and pesticide analyses: January 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: September 1945 to September 1947, September 1950 to September 1952, October 1974 to current year.
WATER TEMPERATURES: October 1975 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (1974-79): Maximum daily, 4,310 micromhos Jan. 17, 1977; minimum daily, 157 micromhos May 26, 1975.
WATER TEMPERATURES (1975-79): Maximum daily, 32.0°C July 31, Aug. 8, 22, 1977, July 16, 1978; minimum daily, 7.0°C Jan. 2, 3, 1979.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 15...	1312	14	2090	7.9	24.5	5	12	6.8	82	3.0	35	88
NOV 13...	1300	14	2230	8.2	15.0	5	3.0	9.4	91	1.0	44	54
DEC 17...	1406	57	1770	8.2	10.5	10	8.8	10.7	93	1.1	80	100
JAN 21...	1805	665	1450	8.0	17.0	20	72	8.4	87	1.9	--	--
FEB 19...	1426	33	1820	8.2	14.0	5	7.4	12.3	119	.8	K15	K3
MAR 24...	1300	14	2150	8.1	20.0	--	14	10.3	112	2.1	K31	96
APR 21...	1230	4.6	2760	8.0	24.0	5	5.7	9.3	109	2.1	<3	40
MAY 29...	1015	770	579	7.7	26.5	160	500	6.8	84	4.0	--	440
JUN 23...	1328	46	1610	8.2	31.0	15	12	6.8	91	.8	56	82
JUL 21...	1433	2.1	2670	8.0	35.5	10	1.9	10.8	152	1.9	K5	K3
AUG 13...	1726	20600	173	7.5	27.0	140	140	4.4	55	2.4	6600	2100
SEP 18...	1609	201	604	--	28.5	31	72	6.8	87	1.7	K520	K390
18...	1414	201	604	--	--	--	72	--	--	--	--	--

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT 15...	520	330	150	36	250	4.8	7.7	220	0	290	390	.3
NOV 13...	560	310	160	34	280	5.2	6.7	280	0	300	410	.4
DEC 17...	470	230	140	28	190	3.8	6.0	290	0	240	300	.3
JAN 21...	380	210	120	20	140	3.1	6.1	210	0	160	260	.2
FEB 19...	670	250	160	29	270	4.6	5.8	270	0	230	330	.4
MAR 24...	600	220	130	31	300	6.1	8.9	280	0	260	450	.4
APR 21...	560	330	160	40	380	6.6	12	290	0	300	540	.3
MAY 29...	160	21	56	6.4	51	1.7	7.5	170	0	53	98	.1
JUN 23...	380	150	120	22	170	3.7	11	280	0	190	250	.4
JUL 21...	630	290	200	31	320	5.6	16	310	0	310	500	.4
AUG 13...	56	3	19	1.6	9.4	.6	5.9	76	0	17	8.1	.1
SEP 18...	190	33	64	8.8	65	1.6	8.1	200	0	48	71	.2
18...	--	--	--	--	--	--	--	200	0	--	--	--

08210000 NUECES RIVER NEAR THREE RIVERS, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)
OCT 15...	9.9	1230	1240	10	1	--	--	.32	.32	.170	.080	.59
NOV 13...	11	1360	1340	--	--	--	--	.27	.21	.280	.250	.61
DEC 17...	12	1100	1070	--	--	--	--	2.3	2.2	.030	.030	.97
JAN 21...	14	897	835	--	--	--	--	2.6	2.4	.160	.080	.86
FEB 19...	12	1090	1110	9	2	--	--	1.5	1.3	.100	.090	.83
MAR 24...	9.7	1290	1310	--	--	--	--	.49	.46	.620	.550	.78
APR 21...	11	1690	1650	16	0	--	--	.33	.31	.570	.560	.83
MAY 29...	18	353	333	1170	35	--	--	.73	.70	.150	.060	3.1
JUN 23...	24	988	930	20	6	--	--	.07	.09	.050	.090	.87
JUL 21...	21	1670	1610	14	29	--	--	.08	.00	.020	.000	--
AUG 13...	11	119	104	73	0	--	--	.30	.30	.100	.010	1.0
SEP 18...	20	370	363	96	6	--	--	.55	.53	.010	.000	1.9
18...	--	--	--	92	13	.47	.020	.49	--	.000	--	1.2

DATE	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDED (MG/L AS C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 15...	.76	.76	.84	.100	.050	--	5.4	.3	32	1.2	95
NOV 13...	.65	.89	.90	.180	.090	--	--	--	31	1.2	80
DEC 17...	.64	1.0	.67	.090	.060	5.8	--	--	40	6.2	66
JAN 21...	.66	1.0	.52	.290	.090	--	6.6	3.8	448	804	93
FEB 19...	.77	.93	.86	.100	.060	7.1	--	--	38	3.4	30
MAR 24...	.65	1.4	1.2	.320	.260	6.5	--	--	12	.43	95
APR 21...	.74	1.4	1.3	.390	.361	--	9.6	.6	22	.27	99
MAY 29...	.20	3.2	.26	.400	.110	28	--	--	804	1860	98
JUN 23...	.68	.92	.77	.120	.160	13	--	--	82	14	70
JUL 21...	1.3	--	1.3	.230	.260	--	7.0	.7	12	.07	96
AUG 13...	.99	1.1	1.0	.230	.120	21	--	--	232	12900	88
SEP 18...	1.2	1.9	1.2	.190	.170	12	--	--	--	--	--
18...	--	1.2	--	.200	--	--	--	--	171	93	71

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDED TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDED RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM SUS- PENDED RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)
OCT 15...	1312	3	0	3	200	0	200	0	0	0	0
DEC 17...	1408	--	--	--	--	--	--	--	--	--	--
JAN 21...	1003	6	1	5	400	300	100	--	--	2	10
FEB 19...	1300	--	--	--	--	--	--	--	--	--	--
APR 21...	1230	4	1	3	300	0	300	0	--	0	0
JUN 23...	1330	--	--	--	--	--	--	--	--	--	--
JUL 21...	1433	11	0	11	200	100	200	0	0	1	10
SEP 18...	1409	--	--	--	--	--	--	--	--	--	--

[illegible] RIVER NEAR [illegible], TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)
OCT											
11...	0	0	1	1	0	0	0	0	[illegible]	[illegible]	10
DEC											
17...	--	--	--	--	--	--	--	--	--	--	--
JAN											
21...	10	0	--	--	[illegible]	--	--	1	--	--	[illegible]
MAR											
24...	--	--	--	--	--	--	--	--	--	--	--
APR											
21...	0	10	0	--	3	5	--	2	[illegible]	[illegible]	[illegible]
JUN											
23...	--	--	--	--	--	--	--	--	--	--	--
JUL											
21...	0	10	0	0	[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]
SEP											
10...	--	--	--	--	--	--	--	--	--	--	--

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, SUSPENDED RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI)
OCT											
11...	2	2	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0
DEC											
17...	--	--	--	--	--	--	--	--	--	--	--
JAN											
21...	--	--	1	--	--	[illegible]	[illegible]	[illegible]	[illegible]	--	--
MAR											
24...	--	--	--	--	--	--	--	--	--	--	--
APR											
21...	[illegible]	--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--
JUN											
23...	--	--	--	--	--	--	--	--	--	--	--
JUL											
21...	[illegible]	1	3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SEP											
10...	--	--	--	--	--	--	--	--	--	--	--

DATE	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
OCT										
11...	0	0	0	0	0	0	0	0	0	0
DEC										
17...	--	--	--	--	0	--	--	--	--	--
JAN										
21...	0	--	--	--	--	--	0	--	--	[illegible]
MAR										
24...	--	--	--	--	0	--	--	--	--	--
APR										
21...	[illegible]	0	0	0	0	--	0	[illegible]	0	[illegible]
JUN										
23...	--	--	--	--	1	--	--	--	--	--
JUL										
21...	[illegible]	1	[illegible]	1	0	0	0	[illegible]	[illegible]	[illegible]
SEP										
10...	--	--	--	--	0	--	--	--	--	--

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	CHLORDANE, TOTAL (UG/L)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG)
OCT											
[illegible]...	[illegible]	--	[illegible]	--	[illegible]	--	[illegible]	--	[illegible]	--	[illegible]
[illegible]...	[illegible]	[illegible]	--	[illegible]	--	[illegible]	--	[illegible]	--	[illegible]	--
[illegible]											
[illegible]...	[illegible]	[illegible]	--	[illegible]	--	[illegible]	[illegible]	[illegible]	--	[illegible]	--

08210000 NUECES RIVER NEAR THREE RIVERS, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG)	DI-AZINON, TOTAL (UG/L)	DI-AZINON, TOTAL IN BOTTOM MATERIAL (UG/KG)	DI-ELDRIN TOTAL (UG/L)	DI-ELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ETHION, TOTAL (UG/L)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTA-CHLOR, TOTAL (UG/L)
NOV											
13...	--	ND	--	ND	--	ND	--	ND	--	ND	--
27...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
FEB											
19...	ND	--	.52	--	ND	--	ND	--	ND	--	ND

DATE	HEPTA-CHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)	MALA-THION, TOTAL (UG/L)	MALA-THION, TOTAL IN BOTTOM MATERIAL (UG/KG)	METH-OXY-CHLOR, TOTAL (UG/L)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARA-THION, TOTAL (UG/L)	METHYL PARA-THION, TOT. IN BOTTOM MATL. (UG/KG)
NOV											
13...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
27...	--	ND	--	ND	--	ND	--	ND	--	ND	--
FEB											
19...	--	ND	--	ND	--	ND	--	ND	--	ND	--

DATE	METHYL TRI-THION, TOTAL (UG/L)	METHYL TRI-THION, TOT. IN BOTTOM MATL. (UG/KG)	PARA-THION, TOTAL (UG/L)	PARA-THION, TOTAL IN BOTTOM MATERIAL (UG/KG)	TOX-APHENE, TOTAL (UG/L)	TOXA-PHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	TOTAL TRI-THION (UG/L)	TRI-THION, TOTAL IN BOTTOM MATERIAL (UG/KG)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
NOV											
13...	--	ND	--	ND	--	ND	--	ND	--	--	--
27...	ND	--	ND	--	ND	--	ND	--	ND	ND	ND
FEB											
19...	ND	--	ND	--	ND	--	ND	--	--	--	--

DATE	LENGTH OF EXPOSURE (DAYS)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS)
APR						
21...	28	2.60	3.39	8.68	3.86	91.0
JUN						
23...	26	.787	1.10	1.10	.320	285

08210000 NUECES RIVER NEAR THREE RIVERS, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	NOV 13,79	MAR 24,80	MAY 29,80	JUN 23,80
TIME	1300	1300	1015	1328
TOTAL CELLS/ML	3400	2600	1800	1400
DIVERSITY: DIVISION	0.1	0.4	1.5	1.7
.CLASS	0.1	0.4	1.5	1.7
..ORDER	0.5	0.4	1.8	2.1
...FAMILY	0.5	1.4	2.3	2.4
....GENUS	0.5	1.5	2.3	2.6

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...COELASTRACEAE								
....COELASTRUM	--	-	--	-	--	-	--	-
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	--	-	--	-	14	1	--	-
....CHLORELLA	--	-	--	-	--	-	13	1
....CHODATELLA	--	-	--	-	--	-	13	1
....KIRCHNERIELLA	--	-	--	-	--	-	--	-
....OOCYSTIS	200	6	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	13	1
....TETRAEDRON	--	-	--	-	--	-	13	1
...SCENEDESMACEAE								
....CRUCIGENIA	--	-	--	-	--	-	--	-
....SCENEDESMUS	--	-	--	-	110	6	52	4
....TETRASTRUM	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	3200#	92	130	5	14	1	260#	19
...POLYBLEPHARIDACEAE								
....SPERMATOZOOPSIS	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	--	-	25	1	--	-	170	12
....MELOSIRA	--	-	--	-	14	1	--	-
..PENNALES								
...CYMBELLACEAE								
....CYMBELLA	--	-	25	1	--	-	--	-
....RHOPALODIA	--	-	--	-	14	1	--	-
...FRAGILARIACEAE								
....SYNEDRA	--	-	--	-	41	2	26	2
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	--	-	14	1	--	-
...NAVICULACEAE								
....ENTOMONEIS	--	-	--	-	14	1	13	1
....NAVICULA	--	-	1700#	64	41	2	39	3
....PLAGIOTROPIS	--	-	25	1	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	66	2	700#	27	770#	43	100	8
...SURIRELLACEAE								
....SURIRELLA	--	-	25	1	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	14	1	13	1
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	--	-	620#	45
....ANACYSTIS	--	-	--	-	--	-	13	1
....GOMPHOSPHAERIA	--	-	--	-	550#	31	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	--	-
....ANABAENOPSIS	--	-	--	-	--	-	--	-
....APHANIZOMENON	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE								
....LYNGBYA	--	-	--	-	140	8	--	-
....OSCILLATORIA	--	-	--	-	--	-	--	-
...RIVULARIACEAE								
....RAPHIDIOPSIS	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	25	1	--	-	13	1
....PHACUS	--	-	--	-	14	1	--	-
....TRACHELOMONAS	--	-	--	-	14	1	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08210000 NUECES RIVER NEAR THREE RIVERS, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	JUL 21,80		AUG 13,80		SEP 18,80		SEP 18,80	
TIME	1433		1726		1409		1414	
TOTAL CELLS/ML	5400		1700		7800		5800	
DIVERSITY: DIVISION	1.1		0.6		0.3		0.6	
.CLASS	1.1		0.6		0.3		0.6	
..ORDER	2.0		0.8		0.9		0.8	
...FAMILY	2.1		2.1		1.2		1.6	
....GENUS	2.3		2.1		1.5		1.9	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...COELASTRACEAE								
....COELASTRUM	--	-	--	-	--	-	130	2
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	--	-	*	0
...OOCYSTACEAE								
....ANKISTRODESMUS	*	0	29	2	*	0	*	0
....CHLORELLA	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	14	1	52	1	--	-
....OOCYSTIS	--	-	--	-	--	-	*	0
....SELENASTRUM	--	-	--	-	--	-	*	0
....TETRAEDRON	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....CRUCIGENIA	67	1	--	-	52	1	--	-
....SCENEDESMUS	*	0	--	-	52	1	180	3
....TETRASTRUM	67	1	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	170	3	--	-	77	1	*	0
...POLYBLEPHARIDACEAE								
....SPERMATOZOOPSIS	990#	18	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	*	0	29	2	*	0	77	1
....MELOSIRA	--	-	29	2	--	-	--	-
..PENNALES								
...CYMBELLACEAE								
....CYMBELLA	--	-	--	-	--	-	--	-
....RHOPALODIA	--	-	--	-	--	-	--	-
...FRAGILARIACEAE								
....SYNEDRA	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	--	-	--	-	--	-
...NAVICULACEAE								
....ENTOMONEIS	--	-	--	-	--	-	--	-
....NAVICULA	*	0	--	-	--	-	--	-
....PLAGIOTROPIS	--	-	--	-	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	180	3	43	3	*	0	*	0
...SURIRELLACEAE								
....SURIRELLA	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOMONADACEAE								
....CRYPTOMONAS	*	0	--	-	*	0	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	1700#	32	--	-	620	8	--	-
....ANACYSTIS	67	1	43	3	320	4	240	4
....GOMPHOSPHAERIA	--	-	--	-	100	1	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	260#	16	210	3	330	6
....ANABAENOPSIS	--	-	--	-	230	3	180	3
....APHANIZOMENON	--	-	--	-	--	-	620	11
...OSCILLATORIACEAE								
....LYNGBYA	--	-	--	-	--	-	--	-
....OSCILLATORIA	2000#	37	790#	47	6000#	76	3900#	67
...RIVULARIACEAE								
....RAPHIDIOPSIS	--	-	420#	25	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	*	0	14	1	*	0	*	0
....PHACUS	--	-	--	-	*	0	--	-
....TRACHELOMONAS	50	1	--	-	--	-	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08210000 NUECES RIVER NEAR THREE RIVERS, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	526	*	*	*	*	*	*	*	*
NOV.	1979	734.7	*	*	*	*	*	*	*	*
DEC.	1979	2012	*	*	*	*	*	*	*	*
JAN.	1980	2564	*	*	*	*	*	*	*	*
FEB.	1980	1077	*	*	*	*	*	*	*	*
MAR.	1980	541	*	*	*	*	*	*	*	*
APR.	1980	392.2	*	*	*	*	*	*	*	*
MAY	1980	118249.3	*	*	*	*	*	*	*	*
JUNE	1980	18477	*	*	*	*	*	*	*	*
JULY	1980	280.1	2160	1280	967	420	320	260	200	540
AUG.	1980	160132.7	283	160	69200	39	16700	28	12100	90
SEPT	1980	15839	570	325	13900	84	3600	59	2520	170
TOTAL		320825.0	**	**	**	**	**	**	**	**
WTD. AVG.		877	**	**	**	**	**	**	**	**

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1										1900	2160	1000
2										1920	2190	826
3										1970	2160	976
4										2000	2200	1250
5										2040	2270	1370
6										2050	2320	1500
7										2070	2360	975
8										2100	2410	330
9										2110	2450	585
10										2130	1500	508
11										2200	222	540
12										2210	200	750
13										2250	182	933
14										2280	199	416
15										2310	244	365
16										2400	343	325
17										2420	335	503
18										2480	366	593
19										2590	392	699
20										2550	394	829
21										2650	382	914
22										2660	393	960
23										2700	429	1040
24										2760	706	1080
25										2630	855	1160
26										2560	941	1200
27										2680	1030	1080
28										2740	1120	1230
29										2700	1220	1330
30										2550	1290	1320
31										2090	1150	---
MEAN										2350	1110	886

08210000 NUECES RIVER NEAR THREE RIVERS, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32.0										29.5	30.5
2	32.0										30.0	30.0
3	32.0										31.5	30.0
4	31.5										29.5	29.5
5	32.0										30.0	28.5
6	31.5										29.5	28.0
7	32.0										---	25.0
8	31.0										---	28.0
9	---										---	28.0
10	---										---	26.0
11	---										25.0	27.0
12	---										25.0	28.0
13	---										27.0	28.0
14	---										28.0	29.0
15	---										28.5	27.0
16	---										29.0	28.0
17	---										30.5	29.0
18	---										30.5	28.0
19	---										30.0	29.0
20	---										30.0	29.0
21	---										---	30.0
22	---										30.0	28.5
23	---										30.5	29.0
24	---										31.5	28.0
25	---										31.0	28.0
26	---										30.0	---
27	---										29.5	27.5
28	---										30.0	29.0
29	---										29.0	30.0
30	---										29.5	27.0
31	---										---	---
MEAN	32.0										29.5	28.5

08210400 LAGARTO CREEK NEAR GEORGE WEST, TX

LOCATION.--Lat 28°03'34", long 98°05'48", Live Oak County, Hydrologic Unit 12110111, near right bank 75 ft (23 m) downstream from bridge on U.S. Highway 281, 0.6 mi (1.0 km) upstream from Dix Hollow, and 19.3 mi (31.1 km) south of George West.

DRAINAGE AREA.--155 mi^2 (401 km^2).

PERIOD OF RECORD.--April 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 197.77 ft (60.280 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. No known regulation or diversion.

AVERAGE DISCHARGE.--8 years, 2.06 ft^3/s (0.058 m^3/s), 1,490 acre-ft/yr (1.84 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,350 ft^3/s (180 m^3/s) Aug. 11, 1980, gage height, 16.50 ft (5.029 m); no flow most of time.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since about 1887, 25.1 ft (7.65 m), discharge 33,500 ft^3/s (949 m^3/s) Oct. 17, 1971. Second highest stage, 24.3 ft (7.41 m), discharge 29,500 ft^3/s (835 m^3/s) occurred Sept. 12, 1971. The third and fourth highest floods occurred in 1914 and September 1967 (stages unknown).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50 ft^3/s (1.42 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Jan. 21	0800	2,190	62.0	12.45	3.795
May 15	0100	280	7.93	7.57	2.307
Aug. 11	0500	*6,350	180	16.50	5.029

Minimum discharge, no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	244	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3820	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	265	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	26	.00
14	.00	.00	.00	.00	.00	.00	.00	5.1	.00	.00	9.6	.00
15	.00	.00	.00	.00	.00	.00	.00	48	.00	.00	5.5	.00
16	.00	.00	.00	.00	.00	.00	.00	.24	.00	.00	3.2	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.2	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.6	.00
19	.00	.00	.00	.00	.00	.00	.00	3.8	.00	.00	1.2	.00
20	.00	.00	.00	.47	.00	.00	.00	3.6	.00	.00	.88	.00
21	.00	.00	.00	827	.00	.00	.00	5.2	.00	.00	.65	.00
22	.00	.00	.00	22	.00	.00	.00	3.4	.00	.00	.49	.00
23	.00	.00	.00	1.8	.00	.00	.00	2.2	.00	.00	.37	.00
24	.00	.00	.00	.17	.00	.00	.00	7.8	.00	.00	.25	.00
25	.00	.00	.00	.00	.00	.00	.00	1.7	.00	.00	.20	.00
26	.00	.00	.00	.00	.00	.00	.00	.17	.00	.00	.13	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00
28	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.01	.00
29	.00	.00	.00	.00	.00	.00	.00	.26	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.02	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	851.44	.00	.00	.00	81.50	.00	.00	4381.33	.00
MEAN	.000	.000	.000	27.5	.000	.000	.000	2.63	.000	.000	141	.000
MAX	.00	.00	.00	827	.00	.00	.00	48	.00	.00	3820	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	1690	.00	.00	.00	162	.00	.00	8690	.00

CAL YR 1979 TOTAL 5.75 MEAN .016 MAX 4.9 MIN .00 AC-FT 11
WTR YR 1980 TOTAL 5314.27 MEAN 14.5 MAX 3820 MIN .00 AC-FT 10540

08210500 LAKE CORPUS CHRISTI NEAR MATHIS, TX

LOCATION.--Lat 28°02'17", long 97°52'15", San Patricio-Jim Wells County line, Hydrologic Unit 12110111, on right upstream corner of outlet tower at right end of Wesley E. Seale Dam on Nueces River, 0.6 mi (1.0 km) upstream from bridge on State Highway 359, and 4.5 mi (7.2 km) southwest of Mathis.

DRAINAGE AREA.--16,656 mi^2 (43,139 km^2).

PERIOD OF RECORD.--September 1948 to current year. Prior to October 1960, monthend records only. The Soil Conservation Service, U.S. Department of Agriculture, in cooperation with the Texas Board of Water Engineers (now Texas Department of Water Resources), collected fragmentary gage-height records in connection with sedimentation studies from Feb. 2, 1942, to July 10, 1947.

REVISED RECORDS.--WSP 1923: 1953(M), 1957(M).

GAGE.--Nonrecording gage read twice daily. Supplemental water-stage recorder operated by city of Corpus Christi. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1957, nonrecording gage at various sites 0.2 mi (0.3 km) upstream at datum 0.52 ft (0.158 m) higher. Oct. 1, 1957, to Apr. 3, 1961, nonrecording gage near left end of Mathis Dam 0.2 mi (0.3 km) upstream at present datum.

REMARKS.--Mathis Dam was completed and storage began July 24, 1934. The original capacity at spillway crest (elevation, 74.5 ft or 22.71 m) was 54,000 acre-ft (66.6 hm^3), but by March 1948 had decreased to 39,400 acre-ft (48.6 hm^3) because of sedimentation. Wesley E. Seale Dam was completed and deliberate impoundment began on Apr. 26, 1958, submerging the old Mathis Dam. Wesley E. Seale Dam is a rolled earthfill dam, 5,930 ft (1,810 m) long, including two spillways. The 1,320-foot (402 m) north spillway has 33 gates that are operated by movable hydraulic lifts. The 1,080-foot (329 m) south spillway has 27 gates that are electrically operated from the control tower. The gates were repaired and modified in August 1966. All gates in both spillways are 37.5 by 8.75 ft (11.4 by 2.67 m) wide. Water for municipal supply for the city of Corpus Christi is released downstream through a 4.0-foot-diameter (1.2 m) cylinder valve and three 2.5- by 4.0-foot (0.8 by 1.2 m) rectangular openings. The releases are diverted from the river at Calallen 35 mi (56 km) downstream for domestic, municipal, irrigation, mining, and industrial uses in the Corpus Christi area. The city of Alice withdrew 3,950 acre-ft (4.87 hm^3) from the lake during the current year for municipal use. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	106.0	-
Top of north spillway gates	94.3	278,200
Top of south spillway gates	93.8	268,500
Crest of spillways	88.0	170,200
Lowest gated outlet (invert)	55.5	646

COOPERATION.--The capacity curve is from an October 1972 survey. Elevation record furnished by the city of Corpus Christi and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 320,000 acre-ft (395 hm^3) Sept. 22, 1967, and Sept. 12, 1971; maximum elevation, 94.82 ft (28.901 m) Sept. 22, 1967; minimum contents, 14,740 acre-ft (18.2 hm^3) May 5, 1951, elevation, 67.62 ft (20.611 m).

EXTREMES (0600) FOR CURRENT YEAR.--Maximum contents, 274,300 acre-ft (338 hm^3) May 22, June 9-12, Aug. 18, and Sept. 28, elevation, 94.1 ft (28.68 m); minimum, 196,500 acre-ft (242 hm^3) May 11-14, elevation, 89.7 ft (27.34 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

89.0	185,500	93.0	253,400
90.0	201,400	94.0	272,400
91.0	217,900	95.0	292,100
92.0	235,300		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 0600

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	244200	230000	214600	212900	233500	231700	216200	201400	272400	257100	231700	268500
2	244200	230000	216200	212900	231700	228200	216200	201400	272400	257100	231700	270400
3	242400	228200	216200	214600	231700	226500	216200	201400	272400	257100	230000	270400
4	244200	228200	216200	211200	231700	224800	216200	201400	272400	255300	230000	270400
5	242400	228200	214600	211200	231700	224800	216200	199800	272400	253400	228200	270400
6	242400	228200	216200	211200	231700	224800	214600	199800	272400	253400	228200	270400
7	240600	226500	214600	211200	231700	224800	214600	198100	272400	253400	228200	268500
8	238800	226500	216200	211200	231700	224800	214600	198100	272400	251600	228200	268500
9	238800	226500	214600	211200	235300	224800	214600	199800	274300	251600	228200	272400
10	240600	226500	214600	211200	231700	224800	212900	198100	274300	249700	233500	272400
11	238800	226500	214600	211200	231700	223000	211200	196500	274300	249700	272400	272400
12	237000	224800	214600	211200	231700	223000	212900	196500	274300	247900	270400	272400
13	237000	224800	216200	209600	231700	224800	212900	196500	272400	247900	272400	272400
14	237000	224800	214600	209600	231700	223000	211200	196500	272400	247900	272400	272400
15	235300	223000	214600	209600	231700	223000	209600	198100	270400	246100	272400	272400
16	235300	223000	212900	209600	235300	221300	209600	201400	268500	246100	272400	272400
17	235300	221300	214600	209600	231700	221300	209600	207900	268500	244200	272400	272400
18	235300	221300	212900	209600	230000	223000	207900	217900	268500	242400	274300	272400
19	235300	219600	212900	207900	230000	221300	207900	240600	268500	242400	272400	272400
20	235300	219600	212900	207900	230000	221300	207900	264700	268500	242400	272400	272400
21	233500	217900	212900	221300	230000	221300	206300	272400	266600	240600	272400	270400
22	233500	221300	212900	233500	230000	219600	206300	274300	264700	240600	270400	270400
23	233500	219600	211200	235300	230000	217900	204600	272400	264700	240600	270400	268500
24	233500	217900	212900	233500	230000	219600	204600	272400	262800	238800	272400	270400
25	233500	217900	211200	233500	230000	219600	207900	272400	262800	238800	272400	268500
26	231700	217900	211200	233500	228200	217900	204600	272400	262800	237000	272400	268500
27	231700	216200	211200	233500	228200	217900	204600	272400	260900	237000	272400	272400
28	231700	217900	211200	231700	228200	217900	204600	272400	260900	235300	272400	274300
29	231700	216200	214600	233500	228200	217900	203000	272400	259000	235300	272400	272400
30	228200	214600	212900	233500	---	217900	201400	272400	259000	233500	270400	272400
31	231700	---	212900	235300	---	216200	---	272400	---	233500	270400	---
MAX	244200	230000	216200	235300	235300	231700	216200	274300	274300	257100	274300	274300
MIN	228200	214600	211200	207900	226200	216200	201400	196500	259000	233500	228200	268500
(†)	91.8	90.8	90.7	92.0	91.6	90.9	90.0	94.0	93.3	91.8	93.9	94.0
(‡)	-12500	-17100	-1700	+22400	-7100	-12000	-14800	+17000	-13400	-25500	+36900	-2000

CAL YR 1979 MAX 274300 MIN 211200
WTR YR 1980 MAX 274300 MIN 196500

08211000 NUECES RIVER NEAR MATHIS, TX

LOCATION.--Lat 28°02'17", long 97°51'36", San Patricio-Jim Wells County line, Hydrologic Unit 12110111, on left bank 6 ft (2 m) downstream from pier of bridge on State Highway 359, 200 ft (61 m) downstream from Texas and New Orleans Railroad Co. bridge, 0.6 mi (1.0 km) downstream from Wesley E. Seale Dam, 4 mi (6 km) southwest of Mathis, and at mile 46.7 (75.1 km).

DRAINAGE AREA.--16,660 mi^2 (43,150 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 27.53 ft (8.391 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Flow is regulated by Lake Corpus Christi (station 08210500) 0.6 mi (1.0 km) upstream. Upstream from Lake Corpus Christi, flow is affected by recharge to permeable formations, small diversions, and minor regulation. Water for municipal and industrial uses at Corpus Christi is released from Lake Corpus Christi above gage and is diverted from river at Calallen 34 mi (55 km) downstream.

AVERAGE DISCHARGE.--41 years, 849 ft^3/s (24.04 m^3/s), 615,100 acre-ft/yr (758 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 138,000 ft^3/s (3,910 m^3/s) Sept. 24, 1967, gage height, 47.7 ft (14.54 m), from floodmark; minimum daily, 6.8 ft^3/s (0.19 m^3/s) Aug. 15, 1940.
Maximum stage since at least 1888, that of Sept. 24, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of about 40 ft (12 m) occurred Sept. 20, 1919, from information by Texas and New Orleans Railroad Co. and is the second highest known.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 28,600 ft^3/s (810 m^3/s) Aug. 11 at 2145 hours, gage height, 32.70 ft (9.967 m); minimum daily, 91 ft^3/s (2.58 m^3/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	118	114	111	106	152	136	184	587	178	168	213
2	125	122	114	108	117	99	119	175	1340	192	170	206
3	144	128	108	99	110	110	115	181	1750	187	168	198
4	136	128	103	97	104	123	117	193	1640	201	170	211
5	131	129	103	103	107	131	125	188	893	202	171	228
6	124	129	107	110	105	123	130	180	603	198	170	199
7	124	129	122	119	96	125	146	180	530	190	170	175
8	127	128	146	146	118	126	138	164	781	184	171	344
9	135	130	147	140	147	126	138	144	1660	181	149	1070
10	141	129	136	139	107	121	139	165	1870	179	1280	1030
11	135	128	126	130	95	115	140	176	2020	180	18900	1360
12	130	120	122	122	102	128	141	170	1500	181	16200	759
13	129	115	112	122	105	130	162	164	199	180	15100	463
14	126	119	102	122	103	116	145	166	199	193	19200	733
15	108	126	102	123	102	108	138	152	201	204	18200	1310
16	119	125	102	123	110	112	138	140	194	174	13900	2010
17	129	125	105	122	102	131	140	141	188	177	10500	1230
18	127	126	111	115	101	134	141	142	187	212	9500	217
19	122	121	115	110	102	132	144	573	186	185	8780	207
20	119	117	125	112	109	131	150	4960	185	185	7390	194
21	119	120	123	812	121	127	157	12900	185	185	4840	187
22	113	123	115	189	116	124	157	11700	184	182	3650	184
23	106	115	111	123	116	124	149	9860	184	159	1400	184
24	112	115	102	116	116	137	142	7860	177	165	1330	172
25	115	115	102	115	116	138	144	2800	172	170	446	171
26	128	116	110	115	115	128	149	2180	172	170	318	216
27	129	116	116	114	110	112	161	2210	171	170	287	298
28	128	108	111	107	118	111	181	2280	171	170	271	314
29	129	104	111	99	119	113	176	1670	171	170	235	262
30	131	108	111	99	---	112	189	544	171	168	218	345
31	123	---	112	101	---	120	---	252	---	170	212	---
TOTAL	3855	3632	3546	4363	3195	3819	4347	62794	18471	5642	153664	14690
MEAN	124	121	114	141	110	123	145	2026	616	182	4957	490
MAX	144	130	147	812	147	152	189	12900	2020	212	19200	2010
MIN	91	104	102	97	95	99	115	140	171	159	149	171
AC-FT	7650	7200	7030	8650	6340	7570	8620	124600	36640	11190	304800	29140

CAL YR 1979 TOTAL 183261 MEAN 502 MAX 6860 MIN 56 AC-FT 363500
WTR YR 1980 TOTAL 282018 MEAN 771 MAX 19200 MIN 91 AC-FT 559400

08211000 NUECES RIVER NEAR MATHIS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1947 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1947 to current year.
WATER TEMPERATURES: October 1947 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,580 micromhos Apr. 19, 20, 1977; minimum daily, 216 micromhos Sept. 19, 1971.
WATER TEMPERATURES (1947-76): Maximum daily, 36.0°C Aug. 8, 1964; minimum daily, 3.0°C Jan. 19, 1968.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 710 micromhos May 21; minimum daily, 252 micromhos Sept. 6.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
NOV 14...	1123	103	594	8.1	18.5	180	28	60	8.2	44
FEB 06...	1530	103	629	--	15.0	200	43	65	8.8	48
MAR 10...	1600	125	650	--	--	200	44	65	9.4	56
APR 20...	1600	146	682	--	--	210	52	67	9.8	55
MAY 31...	1600	260	587	--	--	160	39	52	7.7	49
JUL 28...	1600	170	482	--	--	150	27	50	6.0	38
AUG 30...	1600	213	298	--	--	93	11	32	3.1	20

DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
NOV 14...	1.4	8.2	190	0	46	69	.1	20	349
FEB 06...	1.5	8.0	190	0	50	75	.2	19	368
MAR 10...	1.7	7.9	190	1	57	80	.3	18	388
APR 20...	1.7	8.3	190	0	55	93	.1	17	399
MAY 31...	1.7	8.4	150	0	47	74	.4	14	326
JUL 28...	1.4	7.8	150	0	42	59	.2	8.8	286
AUG 30...	.9	6.3	100	0	21	23	.2	13	168

08211000 NUECES RIVER NEAR MATHIS, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	3855	572	325	3390	71	742	46	478	170
NOV.	1979	3632	596	338	3320	76	745	48	467	180
DEC.	1979	3546	615	349	3340	80	764	49	469	180
JAN.	1980	4363	620	352	4140	81	954	49	582	180
FEB.	1980	3195	641	363	3130	85	736	51	439	190
MAR.	1980	3819	656	372	3830	89	913	52	537	190
APR.	1980	4347	681	385	4520	94	1100	54	632	200
MAY	1980	62794	674	382	64700	93	15700	53	9040	200
JUNE	1980	18471	531	302	15100	63	3160	43	2130	160
JULY	1980	5642	474	270	4120	53	812	39	587	150
AUG.	1980	153664	350	200	83100	35	14300	29	12000	110
SEPT	1980	14690	276	159	6300	24	964	23	913	89
TOTAL		282018	**	**	199000	**	41000	**	28200	**
WTD. AVG.		771	459	261	**	54	**	37	**	140

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	565	586	589	624	653	650	665	667	549	453	422	279
2	560	584	613	622	623	654	663	685	531	450	468	270
3	546	591	615	620	624	653	667	639	551	462	466	274
4	547	585	608	617	627	652	666	686	553	448	474	261
5	569	587	609	625	629	647	671	690	560	472	478	256
6	561	590	601	624	628	657	670	708	556	463	479	252
7	569	587	605	629	630	655	669	696	550	468	475	260
8	573	582	609	625	632	661	671	692	546	464	480	268
9	570	583	611	629	641	554	672	688	519	476	472	267
10	573	585	614	630	631	655	671	689	525	478	466	275
11	571	587	603	628	632	655	673	691	514	482	430	265
12	568	590	609	629	668	654	675	695	504	480	436	267
13	567	591	615	631	636	658	692	694	625	488	425	267
14	568	594	617	628	637	661	681	692	508	472	392	270
15	574	600	616	630	639	665	680	694	517	470	333	272
16	572	607	618	631	642	657	682	696	537	492	292	277
17	575	608	621	628	645	661	685	692	535	494	277	278
18	579	609	617	630	644	664	683	697	531	475	273	312
19	578	607	619	629	643	661	684	610	510	470	264	319
20	577	605	617	629	644	664	683	706	507	471	261	320
21	579	603	618	587	643	667	686	710	500	473	253	294
22	580	601	619	610	644	665	684	707	499	477	263	302
23	584	602	621	626	645	667	685	684	506	480	269	283
24	580	600	623	623	644	663	686	660	509	481	260	302
25	579	598	621	630	659	666	684	608	495	483	255	297
26	580	601	622	633	654	665	687	585	512	481	256	280
27	580	602	626	636	647	659	690	588	500	482	258	288
28	583	603	631	647	648	663	694	590	499	482	274	299
29	582	613	612	640	655	660	687	588	506	481	275	293
30	581	611	624	635	---	664	707	585	498	480	277	287
31	583	---	625	627	---	666	---	583	---	483	278	---
MEAN	573	596	615	627	641	656	680	664	525	475	354	281

08211520 OSO CREEK AT CORPUS CHRISTI, TX

LOCATION.--Lat 27°42'40", long 97°30'06", Nueces County, Hydrologic Unit 12110202, on left downstream end of bridge on Farm Road 763, 1.5 mi (2.4 km) south of intersection of Farm Roads 763 and 665, 1.6 mi (2.6 km) downstream from mouth of West Oso Creek, and 1.9 mi (3.1 km) southwest of intersection of Farm Road 665 and State Highway 357.

DRAINAGE AREA.--90.3 mi^2 (233.9 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1.91 ft (0.582 m) below National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. No known diversions above station. An undetermined amount of water from oilfield operations enters stream upstream at various points. Recording rain gage is located at station.

AVERAGE DISCHARGE.--8 years, 38.0 ft^3/s (1.076 m^3/s), 27,530 acre-ft/yr (33.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,100 ft^3/s (343 m^3/s) Aug. 10, 1980, gage height, 29.37 ft (8.952 m); minimum, 0.25 ft^3/s (0.07 m^3/s) Aug. 26, 27, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of about 24.5 ft (7.47 m) occurred in May 1968, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft^3/s (28.3 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Aug. 10	2300	*12,100	343	29.37	8.952
Sept. 27	1700	1,040	29.5	16.23	4.947

Minimum discharge, 0.37 ft^3/s (0.010 m^3/s) May 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.9	3.1	2.0	2.0	2.7	2.2	2.0	1.7	1.5	1.3	2.1	4.6
2	6.3	2.9	1.9	2.1	2.8	2.0	2.1	1.6	1.6	1.1	2.8	3.7
3	5.5	2.8	1.9	1.8	2.8	2.1	2.1	1.5	1.3	1.2	5.0	51
4	4.6	2.8	1.9	1.8	2.8	2.1	2.1	1.5	1.1	1.2	6.1	121
5	4.9	2.8	1.9	1.4	3.1	2.1	2.0	1.4	1.1	1.3	3.8	21
6	4.7	2.7	2.4	2.5	3.0	2.1	1.9	1.2	1.6	1.2	2.1	14
7	4.7	2.5	2.6	2.4	3.7	2.3	1.9	1.1	2.2	1.9	2.7	11
8	4.7	2.6	2.5	2.2	3.1	2.3	1.7	1.9	1.1	1.5	2.2	3.0
9	4.5	2.4	2.4	2.3	2.7	2.3	1.6	1.4	1.1	1.4	62	2.2
10	4.3	2.2	2.4	2.4	2.5	2.2	1.7	1.6	1.0	1.4	4610	1.7
11	4.3	2.2	2.3	2.4	2.5	2.2	2.2	2.3	.73	1.3	6160	1.6
12	4.1	2.1	2.1	2.5	4.3	2.2	1.6	1.6	.79	1.3	1570	1.3
13	4.2	2.1	2.0	2.7	3.9	2.1	1.5	1.3	.86	1.3	778	1.2
14	4.4	2.2	2.0	2.6	4.3	2.0	1.5	1.2	.93	1.5	364	1.2
15	4.3	2.2	1.9	2.5	3.4	2.0	1.4	3.9	1.2	1.6	138	1.1
16	4.3	2.0	1.8	2.5	3.2	2.6	1.4	1.8	1.3	1.3	160	1.2
17	4.2	2.0	1.7	2.9	3.0	2.0	1.5	1.4	1.2	1.1	93	1.1
18	4.4	2.1	1.6	3.2	2.9	2.0	1.5	1.2	1.1	1.1	32	1.1
19	4.3	2.2	1.6	3.0	2.6	2.3	1.5	19	1.4	1.1	16	1.1
20	4.5	2.3	2.6	2.9	2.6	2.3	1.5	11	1.4	1.1	11	1.0
21	4.5	2.3	3.6	6.0	2.5	1.9	1.5	7.0	1.2	1.1	7.7	1.0
22	4.1	2.2	3.4	14	2.4	2.0	1.5	9.2	1.3	1.6	6.3	.94
23	3.9	2.2	2.7	11	2.3	2.4	1.8	4.0	1.5	2.9	4.8	.90
24	3.6	2.0	1.9	6.7	2.2	1.8	2.1	4.4	1.7	15	4.2	.94
25	3.4	2.1	1.8	4.6	2.1	1.9	1.8	8.5	1.3	20	3.8	.88
26	3.2	2.1	1.9	3.6	2.1	2.1	1.4	3.0	1.2	9.4	3.4	186
27	3.1	2.0	1.7	3.2	2.1	2.1	1.3	1.9	1.1	6.4	3.3	728
28	3.1	2.0	1.9	3.3	2.2	2.2	1.3	1.5	1.3	29	3.1	730
29	3.2	2.0	2.0	3.0	2.3	2.7	1.3	1.5	1.7	19	3.0	247
30	4.7	2.0	2.1	3.1	---	2.2	1.6	1.1	1.6	8.1	3.1	354
31	3.3	---	2.2	2.8	---	1.9	---	1.1	---	4.3	4.1	---
TOTAL	134.2	69.1	66.7	109.4	82.1	66.6	50.3	102.8	38.41	143.0	14067.6	2494.76
MEAN	4.33	2.30	2.15	3.53	2.83	2.15	1.68	3.32	1.28	4.61	454	83.2
MAX	6.9	3.1	3.6	14	4.3	2.7	2.2	19	2.2	29	6160	730
MIN	3.1	2.0	1.6	1.4	2.1	1.8	1.3	1.1	.73	1.1	2.1	.88
AC-FT	266	137	132	217	163	132	100	204	76	284	27900	4950

CAL YR 1979 TOTAL 16693.70 MEAN 45.7 MAX 2540 MIN 1.6 AC-FT 33110
WTR YR 1980 TOTAL 17424.97 MEAN 47.6 MAX 6160 MIN .73 AC-FT 34560

08211520 OSO CREEK AT CORPUS CHRISTI, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: July 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)
NOV 06...	1350	2.8	6500	7.8	22.5	17	9.2	103	5.4	1000	870
DEC 17...	1622	1.7	4900	8.1	8.5	15	11.8	100	1.6	810	650
JAN 28...	1535	3.3	4990	8.3	16.5	23	11.6	118	2.6	810	670
MAR 10...	1603	2.3	5700	8.3	26.5	20	13.6	170	3.4	930	770
APR 21...	1622	1.7	5180	8.7	24.5	13	19.0	220	5.6	810	670
JUN 02...	1618	1.7	4320	8.5	31.5	--	13.5	180	6.2	740	580
JUL 14...	1815	2.0	3260	8.3	32.5	48	9.4	127	4.7	580	430
AUG 26...	1119	3.5	5760	7.6	30.0	1.9	7.0	92	3.5	1000	830

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
NOV 06...	320	58	1000	14	18	200	0	270	1900	.4	23
DEC 17...	250	45	650	9.9	21	190	0	220	1300	.4	20
JAN 28...	250	46	700	11	14	170	0	230	1400	.2	--
MAR 10...	280	56	770	11	21	190	0	270	1600	.3	10
APR 21...	250	46	760	12	20	140	20	230	1500	.3	14
JUN 02...	230	40	610	9.8	18	170	10	220	1200	.3	23
JUL 14...	180	32	510	9.2	19	190	0	170	1000	.3	16
AUG 26...	320	51	810	11	17	220	0	220	1800	.3	12

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
NOV 06...	3690	51	5.3	.35	5.6	.35	1.5	1.8	2.400	10
DEC 17...	2600	25	11	.29	11	.37	1.4	1.8	1.700	9.5
JAN 28...	--	27	6.2	.15	6.3	.27	.35	.62	2.100	11
MAR 10...	3100	34	9.7	.34	10	.39	1.5	1.9	4.000	10
APR 21...	2910	32	8.0	.24	8.2	.13	2.1	2.2	1.800	14
JUN 02...	2440	--	2.4	.12	2.5	.02	2.2	2.2	2.100	15
JUL 14...	2020	99	1.5	.14	1.6	.19	1.4	1.6	2.200	14
AUG 26...	3340	50	.74	.05	.79	.47	1.0	1.5	1.200	13

08211520 OSO CREEK AT CORPUS CHRISTI, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
NOV							
06...	1350	15	500	0	0	0	20
JAN							
28...	1535	16	500	1	0	1	30
APR							
21...	1622	10	600	0	10	2	20
JUL							
14...	1815	16	200	0	10	2	30

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV						
06...	0	240	.0	0	0	10
JAN						
28...	0	550	.3	0	0	20
APR						
21...	0	210	.9	0	0	10
JUL						
14...	7	70	.3	0	0	10

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	CHLOR-DANE, TOTAL (UG/L)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
JAN										
28...	1535	.0	2	.00	.00	.0	.0	0	.00	1.2
JUL										
14...	1815	.0	0	.00	.00	.0	.0	3	.00	1.7

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
JAN										
28...	.00	.7	.00	.3	.17	.00	.0	.00	.00	.0
JUL										
14...	.00	2.1	.00	.3	.07	.00	.1	.00	.00	.0

DATE	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)
JAN										
28...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0
JUL										
14...	.00	.00	.0	.00	.0	.01	.0	.00	.00	.0

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN										
28...	.00	.00	.00	.00	0	0	.00	.02	.16	.00
JUL										
14...	.00	.00	.00	.00	0	0	.00	.00	.00	.00

08211800 SAN DIEGO CREEK AT ALICE, TX

LOCATION.--Lat 27°45'59", long 98°04'31", Jim Wells County, Hydrologic Unit 12110204, at bridge on Edith Drive in Alice, 540 ft (165 m) downstream from Texas and New Orleans Railroad Co. bridge, and 3.2 mi (5.1 km) upstream from confluence with Chiltipin Creek.

DRAINAGE AREA.--319 mi^2 (826 km^2).

PERIOD OF RECORD.--September 1963 to current year.

REVISED RECORDS.--WRD TX-72-1: 1971.

GAGE.--Water-stage recorder. Datum of gage is 189.60 ft (57.790 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow is affected at times by discharge from the flood-detention pools of ten floodwater-retarding structures with a combined detention capacity of 35,980 acre-ft (44.4 hm^3). These structures control runoff from 170 mi^2 (440 km^2) in the San Diego-Rosita drainage basins. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--17 years, 10.4 ft^3/s (0.295 m^3/s), 7,530 acre-ft/yr (9.28 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,200 ft^3/s (544 m^3/s) Oct. 17, 1971, gage height, 17.70 ft (5.395 m); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1928, 18.2 ft (5.55 m) April 1949, equivalent gage height in channel modified in 1955, 17.2 ft (5.24 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 250 ft^3/s (7.08 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Jan. 21	1700	1,240	35.1	7.59	2.313
Aug. 11	0500	*2,480	70.2	9.00	2.743

Minimum discharge, no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.42	.23	.31	.34	.81	.49	.36	.00	.18	.00	.00	.08
2	.37	.19	.36	.35	.90	.38	.40	.00	.22	.00	.00	.12
3	.37	.17	.37	.49	1.1	.23	.54	.01	.14	.00	.00	.09
4	.35	.20	.40	.38	.87	.25	.68	.04	.05	.00	.00	.08
5	.31	.19	.44	.34	.69	.37	.54	.08	.02	.00	.00	.09
6	.26	.18	.38	.33	.66	.43	.59	.11	.01	.00	.00	.07
7	.27	.13	.41	.23	.69	.43	.76	.08	.00	.00	.00	.05
8	.28	.27	.44	.31	.65	.45	.74	.13	.00	.00	.00	.03
9	.28	.18	.41	.29	.58	.77	.56	.17	.00	.00	.00	.03
10	.23	.11	.41	.24	.48	.75	.37	.84	.00	.00	115	.03
11	.29	.14	.41	.40	.42	.49	.28	.55	.00	.00	1200	.02
12	.33	.08	.45	.33	.98	.48	.34	.42	.59	.00	47	.02
13	.32	.20	.47	.36	1.6	.43	.35	.41	.48	.00	12	.01
14	.35	.12	.60	.28	1.9	.40	.31	.30	.38	.00	4.0	.01
15	.64	.19	.51	.36	1.1	.39	.25	.82	.31	.00	1.9	.01
16	.64	.17	.53	.45	.98	.36	.18	.64	.23	.00	1.2	.01
17	.46	.20	.42	.49	.81	.42	.09	.46	.17	.00	.77	.01
18	.41	.19	.40	.47	.70	.37	.06	.58	.12	.00	.53	.00
19	.36	.25	.48	.41	.63	.41	.13	.95	.08	.00	.38	.00
20	.34	.28	.44	.40	.50	.40	.23	.90	.05	.00	.27	.00
21	.33	.44	.48	382	.83	.29	.23	.90	.03	.00	.26	.00
22	.31	.44	.54	159	.61	.34	.23	1.6	.02	.00	.18	.00
23	.23	.33	.59	39	.56	.32	.25	1.6	.01	.00	.13	.00
24	.17	.33	.46	19	.53	1.6	.17	1.3	.00	.00	.20	.07
25	.23	.49	.39	8.5	.44	.92	.14	.87	.00	.00	.24	.02
26	.24	.42	.38	3.4	.41	.52	.11	.70	.00	.00	.43	1.1
27	.27	.47	.45	2.0	.38	.94	.06	.59	.00	.00	.51	6.1
28	.27	.33	.47	1.6	.34	1.0	.04	.71	.00	.00	.58	2.4
29	.27	.30	.75	1.5	.40	.87	.03	.63	.00	.00	.29	1.9
30	.31	.29	.56	1.4	---	.69	.01	.46	.00	.00	.12	11
31	.28	---	.40	1.1	---	.50	---	.26	---	.00	.07	---
TOTAL	10.19	7.51	14.11	625.75	21.55	16.69	9.03	17.11	3.09	.00	1386.06	23.35
MEAN	.33	.25	.46	20.2	.74	.54	.30	.55	.10	.000	44.7	.78
MAX	.64	.49	.75	382	1.9	1.6	.76	1.6	.59	.00	1200	11
MIN	.17	.08	.31	.23	.34	.23	.01	.00	.00	.00	.00	.00
AC-FT	20	15	28	1240	43	33	18	34	6.1	.00	2750	46

CAL YR 1979 TOTAL 730.68 MEAN 2.00 MAX 283 MIN .00 AC-FT 1450
WTR YR 1980 TOTAL 2134.44 MEAN 5.83 MAX 1200 MIN .00 AC-FT 4230

08211850 LAKE ALICE AT ALICE, TX

LOCATION.--Lat 27°47'25", long 98°03'39", Jim Wells County, Hydrologic Unit 12110204, on right bank just upstream from Alice Dam on Chiltipin Creek, 1.8 mi (2.9 km) upstream from confluence of Chiltipin and San Diego Creeks, and 2.6 mi (4.2 km) northeast of Alice.

DRAINAGE AREA.--150 mi² (388 km²).

PERIOD OF RECORD.--December 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by city of Alice).

REMARKS.--The lake is formed by a rolled earthfill dam, which has a total length of 11,525 ft (3,513 m). The dam consists of the main embankment 3,470 ft (1,060 m) long and two protective levees. The west protective levee is 4,275 ft (1,303 m) long and the east protective levee is 2,343 ft (714 m) long. Storage began Oct. 26, 1964, and the dam was completed Mar. 16, 1965. The emergency spillway, 1,000 ft (300 m) wide, is located between the main embankment and the west levee. Collapsible flashboards, 3.5 ft (1.1 m) high, were added to the crest of the emergency spillway. The main spillway is 414 ft (126 m) wide with thirteen 30-foot-wide (9 m) slots for gates, but no gates have been installed at the present time. The main spillway is located between the main embankment and the east levee. The service spillway is a concrete siphon-type spillway, 22.5 ft (6.9 m) wide with a 3.5-foot (1.1 m) opening, and is located in the main enbankment section. The dam is the property of the Alice Water Authority and was built to store water for use by the city of Alice. The area and capacity tables are based on revised maps surveyed in 1963. Flow is affected at times by discharge from flood-detention pools of seven floodwater-retarding structures with combined detention capacity of 21,560 acre-ft (26.6 hm³). These structures control runoff from 111 mi² (287 km²). Records furnished by the city of Alice show that 5,390 acre-ft (6.65 hm³) was diverted during the current year for municipal use. Records furnished by the city of Corpus Christi show that 3,950 acre-ft (4.87 hm³) was diverted to Lake Alice from Lake Corpus Christi during the current year. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	205.0	-
Top of west levee	202.0	-
Top of collapsible flashboards	199.5	5,300
Top of east levee	199.0	4,910
Crest of main spillway	196.5	3,110
Crest of spillway	196.0	2,780
Crest of siphon spillway (lowest outlet)	196.0	2,780

COOPERATION.--The area and capacity tables are furnished by the Alice Water Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 4,780 acre-ft (5.89 hm³) Sept. 12, 1971, elevation, 198.83 ft (60.603 m), from floodmark; minimum, 14 acre-ft (17,300 m³) Feb. 3, 1965, elevation, 185.67 ft (56.592 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 3,740 acre-ft (4.61 hm³) Aug. 11 at 1300 hours, elevation, 197.42 ft (60.174 m); minimum, 44 acre-ft (0.054 hm³) Aug. 7 at 0900 hours, elevation, 188.08 ft (57.327 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

188.0	42	190.0	195	193.0	1,160
188.5	56	190.5	288	194.0	1,640
189.0	82	191.0	423	195.0	2,180
189.5	127	192.0	754	197.5	3,790

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1510	751	673	662	972	822	694	475	303	88	59	2580
2	1490	751	676	645	972	810	701	469	312	86	57	2550
3	1460	751	680	628	992	795	708	472	305	84	55	2530
4	1430	747	680	624	992	784	708	469	293	80	55	2500
5	1410	747	683	624	1000	765	701	450	286	78	55	2470
6	1370	747	697	628	1010	747	694	444	275	76	53	2440
7	1350	747	694	631	1010	736	697	441	252	73	45	2410
8	1320	747	694	628	1020	733	697	441	230	71	48	2380
9	1300	743	694	628	1000	733	683	438	188	70	63	2340
10	1260	736	701	645	972	733	669	435	205	70	598	2310
11	1250	736	701	638	968	725	669	429	197	67	3480	2290
12	1220	736	711	635	968	729	655	429	191	66	3370	2250
13	1200	733	711	641	968	718	652	412	175	64	3310	2210
14	1170	733	718	641	955	704	652	403	168	62	3260	2180
15	1150	736	729	641	943	708	641	414	162	59	3210	2140
16	1130	736	729	648	919	715	621	414	158	59	3150	2100
17	1100	736	725	652	899	718	618	414	150	58	3110	2070
18	1070	736	715	662	895	718	608	406	147	57	3060	2040
19	1050	736	701	669	899	718	598	397	138	56	3010	2000
20	1020	740	683	773	899	722	584	380	134	57	2970	1970
21	992	754	659	935	899	708	578	380	131	59	2940	1930
22	968	733	662	935	899	701	565	400	125	59	2910	1900
23	943	711	676	939	899	704	558	403	119	63	2870	1870
24	923	704	676	955	899	697	551	406	114	65	2850	1900
25	895	687	676	955	892	694	545	406	111	64	2810	1880
26	880	680	683	959	892	690	532	406	106	62	2780	1960
27	864	676	683	959	892	704	519	400	102	63	2740	2240
28	833	676	708	968	876	704	510	397	97	65	2710	2240
29	795	673	708	968	856	711	481	383	91	65	2660	2240
30	788	673	697	976	---	708	481	358	87	63	2630	2260
31	776	---	673	976	---	690	---	355	---	61	2610	---
MAX	1510	754	729	976	1020	822	708	475	312	88	3480	2580
MIN	776	673	659	624	856	690	481	355	87	56	45	1870
(†)	192.06	191.77	191.77	192.57	192.27	191.82	191.19	190.76	189.07	188.61	195.72	195.14
(‡)	-754	-103	0	+303	-120	+166	-209	-126	-268	-26	+2550	-350

CAL YR 1979 MAX 1780 MIN 182 ‡ +232
WTR YR 1980 MAX 3480 MIN 45 ‡ +1063

08211900 SAN FERNANDO CREEK AT ALICE, TX

LOCATION.--Lat 27°46'20", long 98°02'00", Jim Wells County, Hydrologic Unit 12110204, on left bank 34 ft (10 m) downstream from downstream bridge of two bridges on State Highways 44 and 359, 0.5 mi (0.8 km) downstream from confluence of San Diego and Chiltipin Creeks, 2.3 mi (3.7 km) upstream from head of Pintas Creek, and 2.7 mi (4.3 km) northeast of Alice.

DRAINAGE AREA.--507 mi^2 (1,313 km^2).

PERIOD OF RECORD.--December 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 161.68 ft (49.280 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. San Diego Creek joins Chiltipin Creek below Lake Alice to form San Fernando Creek. Flow is regulated by Lake Alice (station 08211850) 2.3 mi (3.7 km) upstream from Chiltipin Creek since Oct. 26, 1964. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08211800. Records furnished by city of Alice show that 3,870 acre-ft (4.77 hm^3) of sewage effluent was discharged into San Diego Creek 1.3 mi (2.1 km) upstream, which comprises most of the low flow. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--15 years (water years 1966-80), 28.7 ft^3/s (0.813 m^3/s), 20,790 acre-ft/yr (25.6 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,800 ft^3/s (759 m^3/s) Sept. 12, 1971, gage height, 16.51 ft (5.032 m); no flow part of each day Aug. 23-26, Sept. 14, 1965, several days in June, July, and August 1967, part of Dec. 27, 1972, Sept. 17, 18, 1978, and Oct. 20-22, 1979.

Maximum stage since at least 1949, that of Sept. 12, 1971. Another high stage for this period was 15.86 ft (4.834 m) Sept. 23, 1967, discharge 16,900 ft^3/s (479 m^3/s).

EXTREMES OUTSIDE PERIOD OF RECORD.--Other high stages since at least 1949 are 15.5 ft (4.72 m) Sept. 9, 1962, discharge 14,600 ft^3/s (413 m^3/s) from field estimate, and 14.2 ft (4.33 m) Sept. 14, 1951. Discharge for flood of Sept. 14, 1951, may have exceeded that for 1962 as the highway was raised between 1952 and 1962. Flood in 1951 was higher at site of discontinued station "San Fernando Creek near Alice". Flood in 1962 was higher than that of 1967 at site of discontinued station; there is a diversion into the Pintas Creek basin between the two gaging sites, and apparently this diversion was greater in 1967 than in 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,900 ft^3/s (337 m^3/s) Aug. 11 at 0700 hours, gage height, 14.70 ft (4.481 m); no flow part of each day Oct. 20-22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	1.3	2.9	1.7	2.2	1.9	2.3	1.3	1.9	.87	.91	2.5
2	2.9	1.9	4.5	2.6	2.1	1.9	2.2	1.6	2.0	.88	1.8	2.5
3	2.7	1.6	3.4	3.2	2.1	2.0	2.2	1.4	1.9	1.0	2.7	2.7
4	2.2	1.0	3.2	3.6	2.2	2.0	2.0	1.6	1.9	1.7	2.3	2.7
5	2.6	1.1	2.7	3.6	2.1	2.6	1.9	1.8	2.0	1.9	1.0	2.5
6	2.3	1.3	3.2	3.6	1.9	2.6	1.9	1.3	1.8	2.0	1.1	2.5
7	2.2	1.2	3.7	3.4	2.1	2.4	2.0	1.3	1.8	1.6	1.0	2.5
8	2.2	1.2	3.7	3.3	2.2	2.2	2.0	1.3	1.7	.54	1.0	2.6
9	2.2	1.4	3.7	3.9	2.0	2.0	2.0	1.6	1.8	.46	2.2	2.5
10	2.1	2.1	3.3	4.5	1.9	2.4	2.1	1.7	2.0	.88	569	2.4
11	2.3	1.4	4.4	3.3	2.0	2.4	2.1	1.6	2.1	1.2	9210	2.3
12	2.0	1.6	3.4	3.0	2.4	2.3	1.9	1.6	2.2	.74	1430	2.2
13	2.1	2.2	2.9	2.6	2.5	2.3	1.7	1.7	2.1	1.5	612	2.2
14	2.7	3.3	4.4	3.6	2.6	2.2	1.9	1.3	2.0	1.6	264	2.2
15	3.1	2.6	4.3	3.6	2.5	2.3	1.8	1.3	1.9	1.2	165	2.3
16	2.5	2.1	4.0	2.6	2.3	2.4	1.8	1.8	2.1	.42	102	2.2
17	1.9	2.3	3.9	3.2	2.1	2.5	1.8	1.7	2.1	.46	55	2.2
18	1.2	2.4	3.4	2.8	2.1	2.4	1.8	1.6	2.0	1.1	25	2.2
19	1.2	2.2	3.8	2.5	2.1	2.4	1.8	2.0	2.0	1.9	11	2.2
20	.79	2.5	5.1	2.6	2.1	2.5	1.7	2.0	1.7	2.0	7.1	2.2
21	.85	2.7	4.6	269	2.0	2.3	1.8	2.0	1.6	2.2	5.9	2.4
22	1.0	2.1	5.0	149	2.2	2.3	1.7	2.4	2.0	1.5	4.7	2.4
23	1.3	2.1	5.0	19	2.1	2.4	1.7	2.5	1.9	1.4	3.7	2.4
24	1.4	2.3	3.7	6.8	2.0	2.4	1.7	2.3	.86	1.7	3.3	2.8
25	1.8	2.2	3.1	4.2	2.4	2.6	1.7	2.1	.90	.76	2.8	2.7
26	1.6	2.4	3.3	3.0	2.2	2.4	1.7	1.9	.98	1.4	2.4	3.3
27	1.2	2.5	3.9	2.5	2.0	2.3	1.5	2.0	2.1	2.1	2.8	128
28	.98	2.9	3.6	2.3	2.1	2.6	1.6	2.3	2.3	1.7	2.8	32
29	1.2	2.2	3.9	2.2	2.2	2.4	1.5	2.1	2.5	.82	2.7	4.8
30	1.5	2.7	3.8	2.4	---	2.1	1.4	2.0	1.9	2.0	2.5	3.8
31	1.9	---	2.4	2.3	---	2.0	---	1.9	---	1.7	2.5	---
TOTAL	58.32	61.6	116.2	525.9	62.7	71.5	55.2	55.0	56.04	41.23	12500.21	232.2
MEAN	1.88	2.05	3.75	17.0	2.16	2.31	1.84	1.77	1.87	1.33	403	7.74
MAX	3.1	3.8	5.1	269	2.6	2.6	2.3	2.5	2.5	2.2	9210	128
MIN	.79	1.0	2.4	1.7	1.9	1.9	1.4	1.3	.86	.42	.91	2.2
AC-FT	116	122	230	1040	124	142	109	109	111	82	24790	461

CAL YR 1979 TOTAL 4102.72 MEAN 11.2 MAX 1940 MIN .79 AC-FT 8140
WTR YR 1980 TOTAL 13836.10 MEAN 37.8 MAX 9210 MIN .42 AC-FT 27440

08212400 LOS OLMOS CREEK NEAR FALFURRIAS, TX
(National stream-quality accounting network)

LOCATION.--Lat 27°15'51", long 98°08'08", Brooks County, Hydrologic Unit 12110205, at downstream side of bridge on U.S. Highway 281 and 2.6 mi (4.2 km) north of Falfurrias.

DRAINAGE AREA.--480 mi² (1,243 km²), of which 4.5 mi² (11.7 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1967 to current year.

GAGE.--Water-stage recorder and V-notch weir low-water control. Datum of gage is 116.58 ft (35.534 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. La Gloria Oil Refinery no longer releases waste during low-flow periods.

AVERAGE DISCHARGE.--13 years, 5.28 ft³/s (0.150 m³/s), 0.15 in/yr (4 mm/yr), 3,830 acre-ft/yr (4.72 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,300 ft³/s (150 m³/s) Sept. 13, 1971, gage height, 12.66 ft (3.859 m); no flow at times in 1970-80.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1929, 15.0 ft (4.57 m) Sept. 13, 1951, from information by State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,370 ft³/s (38.8 m³/s) Aug. 11 at 0900 hours, gage height, 10.13 ft (3.088 m), no other peak above base of 100 ft³/s (2.83 m³/s); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.21	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	151	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1020	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	501	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	232	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	27	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.8	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.3	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.65	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.26	.00
19	.00	.00	.00	.00	.00	.00	.00	35	.00	.00	.06	.00
20	.00	.00	.00	.00	.00	.00	.00	11	.00	.00	.02	.00
21	.00	.00	.00	.00	.00	.00	.00	1.3	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	1.2	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.37	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.10	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	4.8
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.8
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.3
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.27
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	49.09	.00	.00	1938.30	8.17
MEAN	.000	.000	.000	.000	.000	.000	.000	1.58	.000	.000	62.5	.27
MAX	.00	.00	.00	.00	.00	.00	.00	35	.00	.00	1020	4.8
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	97	.00	.00	3840	16

CAL YR 1979 TOTAL 199.65 MEAN .55 MAX 36 MIN .00 AC-FT 396
WTR YR 1980 TOTAL 1995.56 MEAN 5.45 MAX 1020 MIN .00 AC-FT 3960

08212400 LOS OLMOS CREEK NEAR FALFURRIAS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to current year.
WATER TEMPERATURES: October 1974 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 7,380 micromhos July 5, 1976; minimum daily, 58 micromhos Apr. 21, 1979.
WATER TEMPERATURES (1974-77): Maximum daily, 33.0°C July 29, Aug. 1, 1976, May 30, 1977; minimum daily, 3.0°C Nov. 28, 1977.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 225 micromhos Aug. 20; minimum daily, 60 micromhos Aug. 11.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 18...	1018	.00	--	--	--	--	--	--	--	--	--
NOV 13...	1600	.00	--	--	--	--	--	--	--	--	--
DEC 18...	0820	.00	--	--	--	--	--	--	--	--	--
JAN 25...	1310	.00	--	--	--	--	--	--	--	--	--
FEB 20...	0732	.00	--	--	--	--	--	--	--	--	--
MAR 24...	1608	.00	--	--	--	--	--	--	--	--	--
APR 23...	1448	.00	--	--	--	--	--	--	--	--	--
MAY 28...	1902	.00	--	--	--	--	--	--	--	--	--
JUN 23...	1627	.00	--	--	--	--	--	--	--	--	--
JUL 22...	0715	.00	--	--	--	--	--	--	--	--	--
AUG 14...	1215	20	147	6.9	28.0	24	.3	4	10	21000	43000
SEP 18...	--	.00	--	--	--	--	--	--	--	--	--
28...	1840	.32	115	7.1	30.0	--	--	--	--	--	--

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
OCT 18...	--	--	--	--	--	--	--	--	--	--
NOV 13...	--	--	--	--	--	--	--	--	--	--
DEC 18...	--	--	--	--	--	--	--	--	--	--
JAN 25...	--	--	--	--	--	--	--	--	--	--
FEB 20...	--	--	--	--	--	--	--	--	--	--
MAR 24...	--	--	--	--	--	--	--	--	--	--
APR 23...	--	--	--	--	--	--	--	--	--	--
MAY 28...	--	--	--	--	--	--	--	--	--	--
JUN 23...	--	--	--	--	--	--	--	--	--	--
JUL 22...	--	--	--	--	--	--	--	--	--	--
AUG 14...	53	0	17	2.5	3.2	.2	9.5	82	0	.8
SEP 18...	--	--	--	--	--	--	--	--	--	--
28...	39	0	11	2.7	9.3	.7	3.8	48	0	3.9

08212400 LOS OLMOS CREEK NEAR FALFURRIAS, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT										
18...	--	--	--	--	--	--	--	--	--	--
NOV										
13...	--	--	--	--	--	--	--	--	--	--
DEC										
18...	--	--	--	--	--	--	--	--	--	--
JAN										
25...	--	--	--	--	--	--	--	--	--	--
FEB										
20...	--	--	--	--	--	--	--	--	--	--
MAR										
24...	--	--	--	--	--	--	--	--	--	--
APR										
23...	--	--	--	--	--	--	--	--	--	--
MAY										
28...	--	--	--	--	--	--	--	--	--	--
JUN										
23...	--	--	--	--	--	--	--	--	--	--
JUL										
22...	--	--	--	--	--	--	--	--	--	--
AUG										
14...	4.0	.1	15	114	92	.00	.00	.200	.010	2.1
SEP										
18...	--	--	--	--	--	--	--	--	--	--
28...	7.5	.1	17	--	79	--	--	--	--	--

DATE	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	CARBON, ORGANIC SUSPENDED (MG/L AS C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT										
18...	--	--	--	--	--	--	--	--	--	--
NOV										
13...	--	--	--	--	--	--	--	--	--	--
DEC										
18...	--	--	--	--	--	--	--	--	--	--
JAN										
25...	--	--	--	--	--	--	--	--	--	--
FEB										
20...	--	--	--	--	--	--	--	--	--	--
MAR										
24...	--	--	--	--	--	--	--	--	--	--
APR										
23...	--	--	--	--	--	--	--	--	--	--
MAY										
28...	--	--	--	--	--	--	--	--	--	--
JUN										
23...	--	--	--	--	--	--	--	--	--	--
JUL										
22...	--	--	--	--	--	--	--	--	--	--
AUG										
14...	1.1	2.3	1.1	.680	.540	12	.8	33	1.8	96
SEP										
18...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUSPENDED TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR)
AUG											
14...	1215	2	0	2	200	100	100	0	<1	10	10

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)
AUG										
14...	0	0	<3	12	10	2	950	760	190	6

08212400 LOS OLMOS CREEK NEAR FALFURRIAS, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI)
AUG 14...	6	0	190	50	140	.2	.0	.3	4	1

DATE	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
AUG 14...	3	0	0	0	2	2	0	20	10	9

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

DATE	AUG 14,80
TIME	1215
TOTAL CELLS/ML	150000
DIVERSITY: DIVISION	0.0
.CLASS	0.0
..ORDER	0.1
...FAMILY	0.1
....GENUS	0.1

ORGANISM	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)		
.CHLOROPHYCEAE		
..CHLOROCOCCALES		
...OOCYSTACEAE		
....ANKISTRODESMUS	*	0
..VOLVOCALES		
...CHLAMYDOMONADACEAE		
....CHLAMYDOMONAS	*	0
CHRYSOPHYTA		
.BACILLARIOPHYCEAE		
..CENTRALES		
...COSCINODISCACEAE		
....CYCLOTELLA	*	0
CRYPTOPHYTA (CRYPTOMONADS)		
.CRYPTOPHYCEAE		
..CRYPTOMONADALES		
...CRYPTOMONADACEAE		
....CRYPTOMONAS	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)		
.CYANOPHYCEAE		
..CHROOCOCCALES		
...CHROOCOCCACEAE		
....ANACYSTIS	*	0
..HORMOGONALES		
...OSCILLATORIACEAE		
....OSCILLATORIA	150000#	99
...RIVULARIACEAE		
....RAPHIDIOPSIS	*	0
EUGLENOPHYTA (EUGLENOIDS)		
.EUGLENOPHYCEAE		
..EUGLENALES		
...EUGLENACEAE		
....EUGLENA	*	0
....TRACHELOMONAS	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08212400 LOS OLMOS CREEK NEAR FALFURRIAS, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	0.00	*	*	0.00	*	0.00	*	0.00	*
NOV.	1979	0.00	*	*	0.00	*	0.00	*	0.00	*
DEC.	1979	0.00	*	*	0.00	*	0.00	*	0.00	*
JAN.	1980	0.00	*	*	0.00	*	0.00	*	0.00	*
FEB.	1980	0.00	*	*	0.00	*	0.00	*	0.00	*
MAR.	1980	0.00	*	*	0.00	*	0.00	*	0.00	*
APR.	1980	0.00	*	*	0.00	*	0.00	*	0.00	*
MAY	1980	49.09	114	72	9.6	17	2.3	24	3.2	19
JUNE	1980	0.00	*	*	0.00	*	0.00	*	0.00	*
JULY	1980	0.00	*	*	0.00	*	0.00	*	0.00	*
AUG.	1980	1938.30	80	50	264	12	63	17	89	13
SEPT	1980	8.17	107	68	1.5	16	0.4	23	0.5	18
TOTAL		1995.56	**	**	275	**	65	**	93	**
WTD. AVG.		5.4	80	51	**	12	**	17	**	14

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								---			---	---
2								---			---	---
3								---			---	---
4								---			---	---
5								---			---	---
6								---			---	---
7								---			---	---
8								---			---	---
9								---			175	---
10								---			130	---
11								---			60	---
12								---			85	---
13								---			110	---
14								---			147	---
15								---			165	---
16								---			175	---
17								---			190	---
18								---			200	---
19								110			215	---
20								115			225	---
21								140			---	---
22								150			---	---
23								175			---	---
24								195			---	---
25								200			---	---
26								210			---	---
27								220			---	95
28								---			---	115
29								---			---	130
30								---			---	155
31								---			---	---
MEAN								168			156	124

08364000 RIO GRANDE AT EL PASO, TX

LOCATION.--Lat 31°48'10", long 106°32'25", El Paso County, Hydrologic Unit 13030102, at gaging station on the downstream side of the Courchesne Bridge, 5.6 mi (9.0 km) upstream from the Santa Fe Street-Juarez Avenue bridge between El Paso, Tex., and Cd. Juarez, Mex., and 1.7 mi (2.7 km) upstream from the American Dam.

DRAINAGE AREA.--29,267 mi² (75,802 km²).

PERIOD OF RECORD.--Chemical analyses: February 1930 to current year.

REMARKS.--Records of specific conductance and discharge for water year 1980 are given in International Boundary and Water Commission Water Bulletins Nos. 49 and 50.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)
OCT											
15...	1430	145	2130	8.4	21.0	12	9.0	380	370	310	490
16...	0910	109	2150	8.2	14.5	--	--	--	--	--	480
NOV											
14...	1000	85	1800	8.3	7.0	8.1	11.4	--	230	470	490
19...	0817	78	2330	8.1	8.0	--	--	--	--	--	460
DEC											
14...	0930	67	2280	8.3	4.0	8.4	9.8	550	290	1200	480
19...	0910	60	2370	7.6	6.5	--	--	--	--	--	490
JAN											
15...	0900	48	2560	8.0	8.0	--	--	--	--	--	500
15...	0930	48	2450	8.2	7.0	19	10.6	--	180	730	490
FEB											
12...	1130	66	2120	7.9	9.0	--	--	--	--	--	450
14...	1000	77	2180	8.3	6.0	22	10.4	1300	630	1200	450
MAR											
18...	0930	510	997	8.3	8.0	110	12.0	--	230	650	240
19...	0840	500	941	7.9	11.5	--	--	--	--	--	220
APR											
15...	0900	870	730	8.3	13.5	100	8.6	880	190	660	230
18...	0855	522	982	7.9	15.0	--	--	--	--	--	260
MAY											
21...	0925	790	867	7.9	23.0	--	--	--	--	--	230
JUN											
10...	1030	1010	840	8.4	24.0	68	7.2	930	220	790	230
19...	1010	834	875	7.7	22.0	--	--	--	--	--	230
JUL											
16...	1300	755	961	8.1	27.0	--	--	--	--	--	250
AUG											
15...	0926	1160	890	7.7	24.0	--	--	--	--	--	250
19...	1000	720	1000	8.7	25.0	62	7.4	400	830	1300	270
SEP											
16...	1257	3.2	1320	7.8	25.5	--	--	--	--	--	310

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT										
15...	230	140	34	290	5.7	14	--	--	510	240
16...	210	140	31	300	6.0	14	320	0	500	250
NOV										
14...	220	140	34	340	6.7	12	--	--	550	270
19...	190	130	34	350	7.1	12	330	0	540	280
DEC										
14...	210	140	32	350	6.9	13	--	--	540	270
19...	200	140	34	350	6.9	13	350	0	540	280
JAN										
15...	230	140	37	380	7.4	12	330	0	620	330
15...	210	140	34	380	7.5	13	--	--	560	310
FEB										
12...	190	130	30	290	6.0	11	310	0	460	260
14...	210	130	30	320	6.6	12	--	--	500	260
MAR										
18...	80	73	14	120	3.4	6.3	--	--	200	98
19...	59	68	13	100	2.9	6.2	200	0	170	81
APR										
15...	16	69	13	100	2.9	6.4	--	--	100	90
18...	84	78	15	110	3.0	7.3	210	0	190	88
MAY										
21...	56	70	13	96	2.8	7.4	210	0	160	66
JUN										
10...	66	69	13	97	2.8	6.7	--	--	180	74
19...	56	70	13	92	2.7	7.0	210	0	160	66
JUL										
16...	64	75	14	110	3.1	7.6	220	0	190	77
AUG										
15...	75	75	14	96	2.7	7.5	210	0	200	78
19...	83	83	16	130	3.4	8.4	--	--	230	100
SEP										
16...	100	94	19	160	3.9	9.5	260	0	280	140

08364000 RIO GRANDE AT EL PASO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)
OCT										
15...	.8	28	1420	1410	.26	.28	.230	.020	.97	.12
16...	--	23	--	1420	--	--	--	--	--	--
NOV										
14...	.8	29	1500	1540	.27	.29	.110	.080	.58	.45
19...	--	27	--	1540	--	--	--	--	--	--
DEC										
14...	.8	29	1540	1540	.39	.33	.080	.080	.61	.56
19...	--	38	--	1570	--	--	--	--	--	--
JAN										
15...	--	33	--	1710	--	--	--	--	--	--
15...	.8	28	1650	1630	.16	.16	.160	.110	.79	.73
FEB										
12...	--	26	--	1360	--	--	--	--	--	--
14...	.8	38	1450	1440	.68	.46	.020	.060	.86	.45
MAR										
18...	.5	18	624	627	.23	.22	.120	.000	1.4	.67
19...	--	18	--	555	--	--	--	--	--	--
APR										
15...	.6	18	799	524	.20	.21	.060	.040	1.1	.36
18...	--	20	--	612	--	--	--	--	--	--
MAY										
21...	--	19	--	535	--	--	--	--	--	--
JUN										
10...	.5	18	566	555	.12	.06	.080	.010	1.3	.55
19...	--	19	--	531	--	--	--	--	--	--
JUL										
16...	--	21	--	603	--	--	--	--	--	--
AUG										
15...	--	21	--	594	--	--	--	--	--	--
19...	.6	21	727	703	.07	.04	.020	.030	1.1	.60
SEP										
16...	--	23	--	854	--	--	--	--	--	--

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED (MG/L AS C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT										
15...	1.2	.14	.160	.080	4.3	--	--	53	21	73
16...	--	--	--	--	--	--	--	--	--	--
NOV										
14...	.69	.53	.130	.110	--	18	.4	40	9.2	55
19...	--	--	--	--	--	--	--	--	--	--
DEC										
14...	.69	.64	.140	.130	13	--	--	31	5.6	69
19...	--	--	--	--	--	--	--	--	--	--
JAN										
15...	--	--	--	--	--	--	--	--	--	--
15...	.95	.84	.160	.080	9.8	--	--	46	6.0	93
FEB										
12...	--	--	--	--	--	--	--	--	--	--
14...	.88	.51	.280	.210	--	10	.8	50	10	92
MAR										
18...	1.5	.67	.410	.160	9.5	--	--	241	332	88
19...	--	--	--	--	--	--	--	--	--	--
APR										
15...	1.2	.40	.420	.110	11	--	--	347	815	80
18...	--	--	--	--	--	--	--	--	--	--
MAY										
21...	--	--	--	--	--	--	--	--	--	--
JUN										
10...	1.4	.56	.250	.080	--	11	1.1	207	564	86
19...	--	--	--	--	--	--	--	--	--	--
JUL										
16...	--	--	--	--	--	--	--	--	--	--
AUG										
15...	--	--	--	--	--	--	--	--	--	--
19...	1.1	.63	.510	.080	12	--	--	589	1150	24
SEP										
16...	--	--	--	--	--	--	--	--	--	--

08371500 RIO GRANDE ABOVE RIO CONCHO NEAR PRESIDIO, TX

LOCATION.--Lat 29°37'15", long 104°28'50", Presidio County, Hydrologic Unit 13040201, at gaging station 7.8 mi (12.6 km) upstream from the junction of Rio Conchos, about 10 mi (16 km) northwest of Presidio, Tex., and Ojinaga, Chihuahua, Mex., and 285.7 mi (459.7 km) downstream from the American Dam at El Paso.

DRAINAGE AREA.--34,966 mi² (90,562 km²), United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECORD.--Chemical analyses: February 1935 to current year. Prior to 1964, published as "Rio Grande at Upper Presidio".

REMARKS.--Records of specific conductance and discharge for water year 1980 are given in International Boundary and Water Commission Water Bulletins Nos. 49 and 50.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
OCT 16...	1225	14	2900	7.9	26.5	560	400	160	38
DEC 18...	1306	13	4750	7.4	5.5	780	640	200	67
JAN 15...	1010	22	4350	7.6	10.5	750	570	200	61
FEB 22...	1125	16	4570	7.5	13.0	820	640	220	66
MAR 10...	1545	11	5110	7.8	16.5	960	770	260	76
APR 15...	0930	31	1380	7.9	14.0	280	120	87	16
MAY 20...	1345	14	1270	7.7	26.0	270	120	81	17
JUN 19...	1545	3.9	1780	7.4	34.0	340	190	100	22
JUL 17...	1040	14	1330	7.7	25.5	270	130	82	17
AUG 25...	0755	7.4	1680	7.5	27.0	370	210	120	17
SEP 16...	1015	7.8	1190	7.7	25.0	240	78	81	10

DATE	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
OCT 16...	420	7.8	14	190	0	580	500	13	1820
DEC 18...	750	12	16	170	0	870	1000	25	3010
JAN 15...	670	11	13	220	0	840	860	8.1	2760
FEB 22...	680	10	15	220	0	890	900	12	2890
MAR 10...	760	11	14	240	0	920	1100	13	3260
APR 15...	170	4.4	7.7	200	0	410	83	28	900
MAY 20...	170	4.5	7.8	190	0	370	64	31	834
JUN 19...	250	5.9	9.6	180	0	460	180	29	1140
JUL 17...	170	4.5	8.5	180	0	390	81	26	863
AUG 25...	210	4.8	9.2	200	0	430	170	16	1070
SEP 16...	150	4.2	8.1	180	0	280	120	17	748

08376300 SANDERSON CREEK AT SANDERSON, TX
(Formerly published as Sanderson Canyon at Sanderson)

LOCATION.--Lat 30°07'46", long 102°23'06", Terrell County, Hydrologic Unit 13040208, on right bank at downstream side of bridge on U.S. Highway 90, 1.0 mi (1.6 km) south of Sanderson, 2.9 mi (4.7 km) downstream from Three Mile Draw, and 30 mi (48 km) upstream from mouth.

DRAINAGE AREA.--195 mi² (505 km²).

PERIOD OF RECORD.--February 1968 to September 1980 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,706.35 ft (824.895 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 19, 1977, at site 95 ft (29 m) upstream at same datum.

REMARKS.--Records fair. No known regulation or diversion above the station. Flow is affected at times by discharge from the flood-detention pools of two floodwater-retarding structures with a combined detention capacity of 1,470 acre-ft (1.81 hm³). These structures control runoff from 7.55 mi² (19.55 km²). National Weather Service gage-height telemeter located at station.

AVERAGE DISCHARGE.--12 years, 8.51 ft³/s (0.241 m³/s), 0.59 in/yr (15 mm/yr), 6,170 acre-ft/yr (7.61 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,600 ft³/s (923 m³/s) Sept. 18, 1969, gage height, 9.18 ft (2.798 m), from rating curve based on a step-backwater analysis below 10,000 ft³/s (283 m³/s) and two combined slope-area measurements of about 100,000 ft³/s (2,830 m³/s); maximum gage height, 9.44 ft (2.877 m) Apr. 30, 1974; no flow most of time each year.
The second highest flood was that of Sept. 18, 1969.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood since at least 1935, 14.2 ft (4.33 m) June 11, 1965, discharge about 100,000 ft³/s (2,830 m³/s), by combining two slope-area measurements within 4 mi (6 km) upstream from gage. A flood in 1935 reached a discharge of about 20,000 ft³/s (566 m³/s), estimated channel capacity by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--No flow during year, no peak above base of 1,500 ft³/s (42.5 m³/s).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
CFSM	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN.	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

CAL YR 1979 TOTAL 125.06 MEAN .34 MAX 99 MIN .00 CFSM .002 IN .02 AC-FT 248
WTR YR 1980 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 CFSM .000 IN .00 AC-FT .00

08377200 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TX
(National stream-quality accounting network)

LOCATION.--Lat 29°46'50", long 101°45'20", Val Verde County, Hydrologic Unit 13040212, at gaging station 0.1 mi (0.2 km) downstream from Terrell-Val Verde County line, 16.9 mi (27.2 km) from Langtry, and 597.2 mi (960.9 km) downstream from the American Dam at El Paso.

DRAINAGE AREA.--80,742 mi^2 (209,122 km^2), United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECORD.--Chemical analyses: April 1944 to current year. Chemical and biochemical analyses: October 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to current year.
WATER TEMPERATURES: October 1974 to current year.

REMARKS.--Records of and discharge for water year 1980 are given in International Boundary and Water Commission Water Bulletins Nos. 49 and 50. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,110 micromhos Dec. 4, 1974; minimum daily, 321 micromhos Aug. 12, 1980.
WATER TEMPERATURES: Maximum daily, 32.0°C June 13, 1977, July 25, 26 1979, and July 4, 1980; minimum daily, 9.0°C Jan. 12, 1975, and Jan. 8, 1976.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,430 micromhos Mar. 18, July 22; minimum daily, 321 micromhos Aug. 12.
WATER TEMPERATURES: Maximum daily, 32.0°C July 4; minimum daily, 11.0°C Dec. 18, Jan. 31, Feb. 1, 10.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 10...	1308	700	1200	7.6	21.0	19	9.3	107	1.8	32	13
NOV 14...	1250	660	1200	7.5	14.5	13	9.9	99	.6	22	16
DEC 12...	1205	530	1110	7.2	15.0	.90	9.8	99	1.1	20	16
JAN 09...	1145	642	1320	7.1	12.0	6.6	10.2	97	2.4	20	16
FEB 06...	1245	575	1280	7.1	14.0	9.3	11.5	114	1.2	17	11
MAR 12...	1150	544	1240	7.4	20.0	11	9.5	108	1.0	24	20
APR 09...	1310	807	1210	7.6	20.0	40	11.4	128	1.3	47	30
MAY 07...	1145	1075	1270	7.8	24.0	120	9.6	119	1.7	640	700
JUN 11...	1430	2485	1140	7.8	28.0	300	8.4	111	2.7	500	400
JUL 23...	1200	514	1260	7.5	29.0	96	10.6	141	1.8	440	420
SEP 10...	1500	3550	1010	7.5	28.0	630	7.8	103	--	8400	2800

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 10...	320	180	91	22	140	3.4	6.9	170	0	330	100
NOV 14...	320	160	93	22	140	3.4	6.0	200	0	320	94
DEC 12...	320	150	92	22	120	2.9	6.4	210	0	290	94
JAN 09...	320	140	94	21	140	3.4	3.2	220	0	300	120
FEB 06...	320	190	91	22	140	3.4	5.7	160	0	320	110
MAR 12...	330	160	91	24	150	3.6	6.1	200	0	330	110
APR 09...	290	120	82	20	140	3.6	6.6	200	0	330	74
MAY 07...	280	140	81	20	150	3.9	6.9	200	0	330	77
JUN 11...	310	190	89	21	150	3.7	7.7	170	0	360	87
JUL 23...	330	200	91	24	160	3.9	7.4	180	0	390	110
SEP 10...	250	160	86	9.5	99	2.7	6.3	120	0	290	63

08377200 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 10...	1.2	25	804	800	.71	.020	.73	--	.010	--	.61
NOV 14...	1.3	24	779	803	--	--	.96	.98	.020	.020	.65
DEC 12...	1.2	23	755	756	--	--	1.0	.96	.000	.000	.98
JAN 09...	1.4	21	821	813	--	--	.89	.92	.030	.030	.56
FEB 06...	1.3	22	740	795	--	--	.90	.90	.040	.020	.27
MAR 12...	1.4	23	829	837	--	--	.75	.75	.000	.000	.32
APR 09...	1.9	27	790	784	--	--	.94	.94	.040	.060	.78
MAY 07...	1.5	27	802	781	--	--	.85	.86	.030	.010	.79
JUN 11...	1.9	31	839	823	--	--	.65	.66	.130	.100	1.3
JUL 23...	1.3	25	913	889	--	--	.56	.56	.010	.000	1.1
SEP 10...	1.3	19	674	644	--	--	.74	.77	.070	.060	4.0

DATE	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	CARBON, ORGANIC SUSPENDED (MG/L AS C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 10...	--	.62	.41	.010	.000	--	3.1	.2	99	187	99
NOV 14...	.35	.67	.37	.010	.000	7.4	--	--	71	127	98
DEC 12...	.63	.98	.63	.070	.000	3.8	--	--	31	44	98
JAN 09...	.18	.59	.21	.020	.000	5.8	--	--	46	80	99
FEB 06...	.27	.31	.29	.020	.000	--	1.8	.9	90	140	96
MAR 12...	.26	.32	.26	.010	.010	3.7	--	--	86	126	100
APR 09...	.32	.82	.38	.060	.000	3.7	--	--	112	244	99
MAY 07...	.49	.82	.50	.140	.010	8.3	--	--	251	729	99
JUN 11...	.82	1.4	.92	.360	.000	--	6.0	29	1010	6780	91
JUL 23...	.49	1.1	.49	.160	.010	2.5	--	--	243	337	100
SEP 10...	.81	4.1	.87	2.800	.030	47	--	--	5010	48000	97

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUSPENDED TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)
OCT 10...	1308	6	1	5	300	200	100	0	0	<1	0
NOV 14...	1250	--	--	--	--	--	--	--	--	--	--
FEB 06...	1245	5	1	4	100	30	70	0	0	<1	10
MAR 12...	1150	--	--	--	--	--	--	--	--	--	--
JUN 11...	1430	13	4	9	300	200	100	0	0	0	0
JUL 23...	1200	--	--	--	--	--	--	--	--	--	--
SEP 10...	1500	--	--	--	--	--	--	--	--	--	--

08377200 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)
OCT 10...	0	0	0	0	<3	1	1	0	590	--	<10
NOV 14...	--	--	--	--	--	--	--	--	--	--	--
FEB 06...	10	0	0	0	<3	3	3	0	340	330	<10
MAR 12...	--	--	--	--	--	--	--	--	--	--	--
JUN 11...	0	0	3	2	1	13	12	1	11000	11000	20
JUL 23...	--	--	--	--	--	--	--	--	--	--	--
SEP 10...	--	--	--	--	--	--	--	--	--	--	--

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI)
OCT 10...	2	2	0	30	30	<1	.2	.0	.2	--	--
NOV 14...	--	--	--	--	--	--	--	--	--	--	--
FEB 06...	1	1	0	20	20	<1	.1	.0	.1	2	2
MAR 12...	--	--	--	--	--	--	--	--	--	--	--
JUN 11...	9	9	0	500	500	0	.2	.1	.1	13	13
JUL 23...	--	--	--	--	--	--	--	--	--	--	--
SEP 10...	--	--	--	--	--	--	--	--	--	--	--

DATE	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 10...	--	1	0	1	0	0	0	0	0	<3
NOV 14...	--	--	--	--	0	--	--	--	--	--
FEB 06...	0	1	0	1	0	0	0	30	0	30
MAR 12...	--	--	--	--	0	--	--	--	--	--
JUN 11...	0	2	1	1	0	0	0	70	70	0
JUL 23...	--	--	--	--	2	--	--	--	--	--
SEP 10...	--	--	--	--	1	--	--	--	--	--

DATE	TIME	PCB TOTAL (UG/L)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	CHLORDANE, TOTAL (UG/L)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG)
DEC 12...	1205	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 06...	1245	ND	--	ND	--	ND	--	ND	--	ND	--

08377200 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG)	DI-AZINON, TOTAL (UG/L)	DI-AZINON, TOTAL IN BOTTOM MATERIAL (UG/KG)	DI-ELDRIN TOTAL (UG/L)	DI-ELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ETHION, TOTAL (UG/L)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTA-CHLOR, TOTAL (UG/L)
DEC											
12...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB											
06...	ND	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	HEPTA-CHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)	MALA-THION, TOTAL (UG/L)	MALA-THION, TOTAL IN BOTTOM MATERIAL (UG/KG)	METH-OXY-CHLOR, TOTAL (UG/L)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARA-THION, TOTAL (UG/L)	METHYL PARA-THION, TOT. IN BOTTOM MATL. (UG/KG)
DEC											
12...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB											
06...	--	ND	--	ND	--	ND	--	ND	--	ND	--

DATE	METHYL TRI-THION, TOTAL (UG/L)	METHYL TRI-THION, TOT. IN BOTTOM MATL. (UG/KG)	PARA-THION, TOTAL (UG/L)	PARA-THION, TOTAL IN BOTTOM MATERIAL (UG/KG)	TOX-APHENE, TOTAL (UG/L)	TOXA-PHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	TOTAL TRI-THION (UG/L)	TRI-THION, TOTAL IN BOTTOM MATERIAL (UG/KG)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
DEC											
12...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB											
06...	ND	--	ND	--	ND	--	ND	--	--	--	--

DATE	LENGTH OF EXPOSURE (DAYS)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS)
DEC						
12...	28	64.7	66.7	5.44	.000	368
APR						
09...	28	2.05	2.21	.090	.000	1778
MAY						
07...	28	.472	.472	.340	.100	.00

08377200 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

	NOV 14,79	MAR 12,80	MAY 7,80	JUN 11,80	JUL 23,80	SEP 10,80
DATE	NOV 14,79	MAR 12,80	MAY 7,80	JUN 11,80	JUL 23,80	SEP 10,80
TIME	1250	1150	1145	1430	1200	1500
TOTAL CELLS/ML	6400	3300	16000	8400	3200	2200
DIVERSITY: DIVISION	1.6	1.5	0.7	1.5	1.4	0.7
.CLASS	1.6	1.6	0.7	1.5	1.4	0.7
..ORDER	1.9	1.9	0.8	1.7	1.6	0.7
...FAMILY	2.9	2.9	2.0	2.8	2.9	1.6
....GENUS	3.6	3.3	2.1	3.0	3.0	1.6

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...COELASTRACEAE												
....COELASTRUM	230	4	--	-	8800#	56	2400#	28	150	5	1100#	53
...HYDRODICTYACEAE												
....PEDIASTRUM	230	4	100	3	81	1	--	-	1100#	35	--	-
...MICRACTINIACEAE												
....MICRACTINIUM	--	-	--	-	--	-	--	-	51	2	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	570	9	180	6	280	2	160	2	*	0	--	-
....CHLORELLA	--	-	50	2	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	460	7	--	-	--	-	300	4	--	-	--	-
....FRANCEIA	--	-	--	-	*	0	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	17	1	--	-	--	-	--	-	--	-
....OOCYSTIS	570	9	390	12	1000	6	490	6	--	-	570#	27
....SELENASTRUM	--	-	--	-	--	-	--	-	*	0	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	*	0	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	110	2	--	-	--	-	--	-	--	-	--	-
....CRUCIGENIA	430	7	67	2	280	2	--	-	--	-	--	-
....SCENEDESMUS	400	6	940#	28	2700#	17	160	2	490#	15	--	-
....TETRASTRUM	--	-	--	-	--	-	130	2	--	-	--	-
..TETRASPORALES												
...COCCOMYXACEAE												
....ELAKATOTHRIX	--	-	34	1	--	-	--	-	--	-	--	-
...PALMELLACEAE												
....SPHAEROCYSTIS	--	-	--	-	*	0	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	57	1	150	5	81	1	*	0	26	1	--	-
....THALASSIOSIRA	--	-	34	1	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	*	0	34	1	*	0	130	2	--	-	--	-
...CYMBELLACEAE												
....CYMBELLA	--	-	17	1	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	--	-	--	-	66	1	*	0	--	-
...FRAGILARIACEAE												
....FRAGILARIA	600	9	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	230	4	34	1	1600	10	2200#	26	77	2	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	17	1	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....NAVICULA	110	2	130	4	*	0	130	2	210	6	140	7
....PLAGIOTROPIS	--	-	17	1	--	-	--	-	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	340	5	640#	19	560	4	660	8	360	11	290	13
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	*	0	--	-	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	57	1	--	-	--	-	--	-	--	-	--	-
...OCHROMONADACEAE												
....DINOBRYON	*	0	34	1	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	*	0	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	260	3	210	6	--	-
....ANACYSTIS	290	5	--	-	240	2	66	1	170	5	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	130	4	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	1600#	25	--	-	--	-	1100	13	150	5	--	-
....SCHIZOTHRIX	--	-	340	10	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....TRACHELOMONAS	--	-	34	1	--	-	*	0	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	50	2	--	-	*	0	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08377200 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	19396	1180	766	40100	89	4690	300	16000	310
NOV.	1979	18274	1150	745	36700	83	4100	300	14700	300
DEC.	1979	16873	1180	765	34800	89	4060	300	13900	310
JAN.	1980	19215	1270	817	42400	110	5480	320	16600	320
FEB.	1980	16538	1220	792	35400	97	4350	310	14000	320
MAR.	1980	23138	1240	799	49900	100	6270	310	19600	320
APR.	1980	25503	1170	759	52200	87	6000	300	20800	310
MAY	1980	41548	1100	716	80300	78	8800	290	32200	290
JUNE	1980	20169	1010	658	35800	62	3360	270	14600	270
JULY	1980	12036	1090	710	23100	76	2470	290	9280	290
AUG.	1980	117738	683	452	144000	26	8150	190	60900	200
SEPT	1980	110799	878	577	173000	46	13900	240	71400	240
TOTAL		441227	**	**	747000	**	71600	**	304000	**
WTD. AVG.		1206	960	627	**	60	**	260	**	260

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1200	1170	1100	1280	1230	1220	1170	1170	1130	939	1070	810
2	1170	1170	1100	1270	1240	1230	1170	1180	1130	898	1060	850
3	1180	1160	1120	1300	1230	1220	1160	550	1120	943	1070	950
4	1170	1170	1130	1330	1230	1230	1150	474	1110	955	1090	1030
5	1160	1180	1130	1310	1230	1220	1180	850	1110	965	1080	1200
6	1170	1170	1130	1290	1220	1210	1160	1170	1120	959	1090	1360
7	1180	1150	1130	1300	1220	1220	1170	1190	1110	925	1100	1000
8	1180	1160	1140	1260	1220	1250	1170	1160	1120	818	1000	998
9	1190	1160	1140	1290	1220	1230	1170	1260	1110	893	1120	1410
10	1200	1160	1150	1290	1210	1230	1170	1310	1090	921	1000	1150
11	1200	1150	1160	1270	1230	1240	1170	1240	800	914	750	723
12	1190	1170	1160	1260	1220	1230	1180	1180	1000	919	321	978
13	1190	1180	1170	1300	1200	1230	1180	1140	1260	932	433	663
14	1180	1190	1160	1260	1200	1270	1180	1120	1000	918	425	921
15	1180	1180	1160	1230	1220	1330	1170	1120	750	935	950	785
16	1160	1180	1160	1230	1210	1410	1170	1130	831	989	817	1120
17	1170	1180	1180	1240	1210	1420	1160	1140	853	1070	731	1160
18	1160	1160	1180	1240	1210	1430	1160	1140	765	1120	772	1160
19	1170	1150	1190	1250	1230	1340	1160	1150	750	1230	736	1160
20	1190	1130	1180	1260	1220	1220	1170	1170	810	1310	974	1160
21	1160	1120	1190	1270	1240	1190	1180	1150	910	1390	840	1140
22	1190	1110	1200	1260	1240	1200	1170	1160	833	1430	885	1130
23	1230	1100	1220	1270	1240	1170	1180	1150	881	1310	719	1120
24	1220	1090	1240	1250	1240	1170	1170	1070	1070	1220	1040	1110
25	1190	1090	1240	1240	1240	1170	1160	1170	1090	1210	835	1090
26	1180	1100	1250	1250	1230	1160	1160	1150	1000	1180	836	798
27	1180	1090	1240	1260	1220	1150	1160	1150	1020	1160	845	943
28	1190	1100	1240	1240	1220	1160	1180	1150	1090	1140	858	501
29	1170	1100	1230	1240	1220	1170	1180	1150	1140	1130	798	704
30	1170	1100	1240	1250	---	1180	1160	1140	1030	1120	774	674
31	1170	---	1240	1240	---	1180	---	1120	---	1090	780	---
MEAN	1180	1140	1180	1270	1220	1230	1170	1110	1000	1060	864	993

08377200 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.0	18.5	12.5	14.0	11.0	13.0	22.0	---	29.0	30.0	29.0	28.5
2	27.5	18.5	12.0	15.0	13.0	13.5	23.5	---	29.0	30.0	30.0	28.5
3	26.5	19.0	12.0	14.0	13.5	13.5	23.0	---	29.0	30.0	29.0	27.0
4	---	19.0	14.0	14.0	13.0	17.0	22.0	15.5	29.0	32.0	29.0	29.5
5	25.0	20.0	14.0	14.0	16.0	17.0	19.5	---	29.5	28.0	29.0	30.0
6	26.0	17.0	14.0	15.0	17.0	---	22.0	26.0	26.0	27.5	28.0	30.0
7	25.5	17.5	12.0	14.5	16.5	18.5	24.0	27.0	31.0	---	28.0	30.0
8	26.0	19.0	15.0	15.0	12.0	20.5	23.0	28.0	29.0	31.0	29.0	28.5
9	24.0	19.0	15.5	14.0	11.5	21.0	22.0	27.0	27.5	30.0	30.0	29.0
10	24.0	16.5	17.0	15.5	11.0	22.0	22.5	28.0	28.0	30.0	27.0	27.5
11	24.0	17.0	17.0	15.0	12.0	22.0	23.0	28.0	29.0	30.0	---	27.0
12	25.5	17.5	14.0	15.5	12.5	21.0	17.0	28.5	28.0	27.0	24.0	25.5
13	25.0	17.0	14.0	16.0	15.0	20.0	17.0	26.5	28.5	30.0	26.0	27.0
14	25.0	15.0	12.5	17.0	18.0	17.5	19.0	24.0	---	29.0	27.5	28.0
15	22.5	16.0	13.5	16.0	19.0	19.0	19.5	26.5	29.0	29.0	28.5	27.5
16	26.0	16.0	13.5	16.0	15.0	19.5	22.0	27.5	30.0	29.0	26.0	28.0
17	25.5	17.0	11.5	18.0	12.0	---	23.0	28.0	28.0	28.0	27.0	28.0
18	24.0	19.0	11.0	16.0	14.0	18.0	24.0	25.5	30.0	29.0	26.5	28.5
19	---	19.0	14.0	19.0	16.5	---	23.0	27.0	30.0	29.0	28.0	27.5
20	26.0	21.0	15.5	15.0	20.0	20.0	23.5	25.5	30.0	29.5	28.5	27.5
21	26.5	17.0	15.0	15.0	18.0	18.0	22.0	28.0	30.0	30.0	29.0	28.0
22	23.0	---	17.5	14.0	19.0	18.5	23.5	28.0	30.0	29.0	29.0	28.0
23	21.5	15.0	17.0	14.0	19.5	20.0	23.0	28.0	30.0	31.0	28.0	27.0
24	21.0	14.0	14.5	13.0	19.0	19.0	---	29.0	31.0	31.0	27.5	27.0
25	21.0	15.0	---	15.5	18.5	19.5	21.0	30.0	30.0	30.0	27.0	26.0
26	21.5	15.5	15.0	15.5	16.5	20.0	22.5	29.0	30.5	30.0	28.5	24.5
27	23.0	15.5	16.0	13.0	18.5	22.0	22.0	26.5	30.0	30.5	---	25.0
28	---	14.0	15.0	13.5	16.0	21.0	23.5	28.0	30.0	31.0	28.5	23.0
29	24.0	13.5	15.0	12.0	19.5	20.0	24.0	29.5	31.0	31.0	29.5	23.5
30	20.5	13.0	15.0	14.0	---	21.0	24.0	28.0	30.5	30.0	29.5	24.5
31	20.0	---	---	11.0	---	20.0	---	29.0	---	29.0	28.5	---
MEAN	24.0	17.0	14.5	15.0	15.5	19.0	22.0	27.0	29.5	29.5	28.0	27.5

08407500 PECOS RIVER AT RED BLUFF, NM
(National stream-quality accounting network station)

LOCATION.--Lat 32°04'30", long 104°02'21", in SW1/4NW1/4NE1/4 sec.1, T.26 S., R.28 E., Eddy County, Hydrologic Unit 13060011, on right bank at Red Bluff, 0.2 mi (0.3 km) downstream from Red Bluff Draw, 1.6 mi (2.6 km) northwest of the El Paso Natural Gas (Pecos River) compressor station, 5.2 mi (8.4 km) north of the New Mexico-Texas State line, 5.5 mi (8.8 km) upstream from Delware River, and 411.2 mi (661.6 km) upstream from mouth. Water-quality sampling site 1.4 mi (2.3 km) downstream at mile 409.8 (659.4 km).

DRAINAGE AREA.--19,540 mi² (50,610 km²), approximately (contributing area).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1937 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,850.05 ft (868.695 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Flow regulated by storage in Lake Sumner, Lake McMillan, Lake Avalon, and by several small diversion dams that divert for power or irrigation. Diversions and ground-water withdrawals above station for irrigation of about 202,000 acres (820 km²), 1959 determination.

AVERAGE DISCHARGE.--43 years (1938-80), 172 ft³/s (4.871 m³/s), 124,600 acre-ft/yr (154 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 111,000 ft³/s (3,140 m³/s) Aug. 23, 1966, gage height, 33.32 ft (10.156 m), from rating curve extended above 30,000 ft³/s (850 m³/s) on basis of slope-area measurement of peak flow; minimum, 0.19 ft³/s (0.005 m³/s) Aug. 1, 1966.

The flood of Aug. 23, 1966, exceeded all floods at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1904 reached a stage of 28.0 ft (8.53 m), from information by Panhandle and Santa Fe Railway Co.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 26,700 ft³/s (756 m³/s) Sept. 27, gage height, 19.80 ft (6.035 m), no other peak above base of 1,800 ft³/s (51.0 m³/s); minimum, 6.8 ft³/s (0.19 m³/s) July 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	67	65	65	60	51	36	24	28	16	12	16
2	55	60	67	65	63	49	29	27	24	16	14	15
3	51	47	69	65	70	46	28	26	21	14	13	13
4	49	42	69	65	77	46	30	29	19	12	13	13
5	48	40	67	64	78	42	28	38	22	9.0	14	16
6	67	40	67	64	78	43	25	52	24	7.8	13	16
7	75	43	66	64	77	44	27	48	22	9.4	12	15
8	62	44	66	63	77	39	26	41	20	18	10	18
9	50	46	65	63	76	35	45	34	18	17	11	172
10	57	50	65	59	76	34	66	32	21	16	11	131
11	57	56	65	62	76	31	46	30	32	14	13	163
12	53	57	65	63	76	30	35	28	25	13	19	182
13	53	58	69	64	77	28	30	28	18	13	20	112
14	51	59	71	63	77	26	48	42	17	14	24	75
15	47	59	75	63	77	25	41	230	16	14	25	57
16	45	59	78	65	77	25	31	202	18	14	22	50
17	45	62	76	65	78	23	28	145	14	15	17	64
18	42	64	71	65	80	20	27	82	8.6	11	14	72
19	39	65	70	65	78	20	26	54	7.4	9.9	16	62
20	39	65	70	65	77	22	28	46	14	9.4	17	53
21	37	66	69	65	75	20	33	44	28	11	18	56
22	33	64	69	72	70	18	33	42	26	12	18	55
23	33	63	67	69	66	20	33	38	19	11	19	51
24	30	64	67	69	62	24	35	34	17	12	15	52
25	31	63	66	70	58	24	34	32	32	13	13	65
26	35	67	66	65	57	25	33	37	13	14	12	2720
27	35	70	65	59	57	26	32	45	11	13	12	10300
28	28	69	66	59	56	29	30	37	10	12	12	1180
29	43	66	65	58	54	32	26	26	9.4	8.6	12	324
30	54	64	65	58	---	40	24	20	15	8.6	16	206
31	56	---	65	59	---	41	---	23	---	8.2	17	---
TOTAL	1458	1739	2106	1980	2060	978	993	1616	569.4	385.9	474	16324
MEAN	47.0	58.0	67.9	63.9	71.0	31.5	33.1	52.1	19.0	12.4	15.3	544
MAX	75	70	78	72	80	51	66	230	32	18	25	10300
MIN	28	40	65	58	54	18	24	20	7.4	7.8	10	13
AC-FT	2890	3450	4180	3930	4090	1940	1970	3210	1130	765	940	32380

CAL YR 1979 TOTAL 20001.4 MEAN 54.8 MAX 273 MIN 3.2 AC-FT 39670
WTR YR 1980 TOTAL 30683.3 MEAN 83.8 MAX 10300 MIN 7.4 AC-FT 60860

08407500 PECOS RIVER AT RED BLUFF, NM--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1937 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1937 to current year.
WATER TEMPERATURES: October 1952 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 51,400 micromhos June 20, 1972; minimum daily, 268 micromhos Sept. 18, 1946.
WATER TEMPERATURES: Maximum daily, 36.0°C July 31, 1966, July 13, 1970; minimum daily, 1.0°C Jan. 10, 11, 1962, Jan. 13, 1963.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 21,800 micromhos July 18; minimum daily, 623 micromhos Sept. 27.
WATER TEMPERATURES: Maximum daily, 30.5°C July 3, 8, 14, 15; minimum daily, 5.0°C Dec. 2, 18.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)
OCT										
11...	1100	57	9500	8.1	18.0	8.4	9.8	16	14	2100
NOV										
08...	1035	44	7400	8.2	13.0	7.7	10.8	5	2	2100
DEC										
04...	1030	69	10400	8.2	7.0	11	--	1	3	2200
JAN										
17...	1015	65	8840	8.2	10.0	5.4	12.2	1	2	1800
FEB										
27...	0930	57	9560	8.5	14.0	4.5	11.0	--	4	1900
MAR										
20...	0900	22	--	--	16.5	--	--	--	--	--
26...	0900	25	1490	8.5	16.5	26	12.6	33	0	2100
APR										
29...	0930	26	12800	8.2	23.0	28	10.0	7	25	2400
MAY										
01...	1000	24	13800	7.1	20.5	--	--	--	--	--
28...	0945	37	12500	8.3	27.0	17	7.4	14	12	2200
JUN										
25...	0930	32	22500	8.4	26.0	2.1	8.1	40	240	2800
JUL										
23...	0945	11	24000	8.2	28.0	18	7.5	26	450	3200
AUG										
27...	1000	12	19600	8.4	26.0	3.7	7.9	16	700	3000
SEP										
24...	1130	52	13500	8.6	24.0	17	9.2	33	500	2600

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
OCT										
11...	2000	510	210	1700	16	55	1900	2800	.8	14
NOV										
08...	1900	480	210	1400	13	48	1600	2300	.8	9.5
DEC										
04...	2100	530	220	1600	15	19	1600	2600	.8	12
JAN										
17...	1700	420	190	1400	14	39	1600	2200	.8	4.1
FEB										
27...	1800	460	190	1500	15	42	1600	2400	.7	2.9
MAR										
20...	--	--	--	--	--	--	--	--	--	--
26...	2000	480	220	2700	26	91	2000	3900	.9	.9
APR										
29...	2300	550	250	2400	21	7.3	2100	3700	.9	4.9
MAY										
01...	--	--	--	--	--	--	--	--	--	--
28...	2100	500	240	2200	20	74	1800	3600	.5	6.0
JUN										
25...	2700	620	300	3300	27	110	2500	5600	.9	6.2
JUL										
23...	3100	710	340	3800	29	140	2700	6400	1.2	4.2
AUG										
27...	3000	680	320	3700	29	120	2600	5800	1.0	.4
SEP										
24...	2500	580	280	1900	16	52	2000	3500	.9	13

08407500 PECOS RIVER AT RED BLUFF, NM--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)
OCT 11...	7490	7260	.72	.72	.100	.120	1.0	.54	1.1	.66
NOV 08...	6550	6130	1.0	.97	.180	.260	1.3	.63	1.5	.89
DEC 04...	7220	6680	1.6	1.4	.300	.240	.90	.76	1.2	1.0
JAN 17...	6090	5940	.78	.78	.140	.140	1.5	.80	1.6	.94
FEB 27...	6320	6280	.33	.33	.290	.220	1.5	.71	1.8	.93
MAR 20...	--	--	--	--	--	--	--	--	--	--
26...	10600	9450	.00	.09	.180	.490	3.7	1.9	3.9	2.4
APR 29...	9710	9070	.00	.02	.090	.130	2.3	.68	2.4	.81
MAY 01...	--	--	--	--	--	--	--	--	--	--
28...	8940	8490	.02	.02	.300	.300	1.6	.46	1.9	.76
JUN 25...	12900	12500	.00	.00	.140	.030	2.2	1.2	2.3	1.2
JUL 23...	14100	14200	.00	.01	.160	.100	.94	.40	1.1	.50
AUG 27...	13000	13300	.00	.00	.200	.230	1.3	.74	1.5	.97
SEP 24...	8930	8380	.22	.22	.200	.200	1.9	.90	2.1	1.1

DATE	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED (MG/L AS C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 11...	.030	.010	.010	9.2	5.2	1.2	22	3.4	100
NOV 08...	.020	.000	.000	5.3	4.5	.5	25	3.0	92
DEC 04...	.020	.010	.000	--	9.1	.7	30	5.6	94
JAN 17...	.060	.010	.010	7.2	4.0	--	17	3.0	99
FEB 27...	.120	.010	.000	13	7.6	3.6	35	5.4	87
MAR 20...	--	--	--	--	--	--	52	3.1	86
26...	.130	.040	.010	--	7.7	4.4	--	--	--
APR 29...	.100	.010	.000	15	12	.5	29	2.0	95
MAY 01...	--	--	--	--	--	--	--	--	--
28...	.110	.010	.000	8.7	6.8	2.5	48	4.8	95
JUN 25...	.150	.010	.000	--	11	3.2	49	4.2	98
JUL 23...	.080	.010	.010	11	12	4.1	34	1.0	94
AUG 27...	.040	.010	.000	9.9	8.1	.8	28	.91	94
SEP 24...	.050	.010	.020	--	8.8	2.3	21	2.9	90

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)
OCT 11...	1100	--	--	--	--	--	--	--	--	--	--
NOV 08...	1035	--	--	--	--	--	--	--	--	--	--
DEC 04...	1030	2	1	1	500	200	300	0	0	1	0
JAN 17...	1015	--	--	--	--	--	--	--	--	--	--
FEB 27...	0930	--	--	--	--	--	--	--	--	--	--
MAR 26...	0900	1	1	0	400	400	30	1	0	2	20
APR 29...	0930	--	--	--	--	--	--	--	--	--	--
MAY 28...	0945	--	--	--	--	--	--	--	--	--	--
JUN 25...	0930	3	2	1	200	0	200	1	0	1	20
JUL 23...	0945	--	--	--	--	--	--	--	--	--	--
AUG 27...	1000	--	--	--	--	--	--	--	--	--	--

08407500 PECOS RIVER AT RED BLUFF, NM--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)
OCT 11...	--	--	--	--	--	--	--	--	--	--	30
NOV 08...	--	--	--	--	--	--	--	--	--	--	30
DEC 04...	0	10	0	0	0	1	0	2	520	500	20
JAN 17...	--	--	--	--	--	--	--	--	--	--	30
FEB 27...	--	--	--	--	--	--	--	--	--	--	90
MAR 26...	10	10	1	0	<3	6	4	2	550	540	10
APR 29...	--	--	--	--	--	--	--	--	--	--	70
MAY 28...	--	--	--	--	--	--	--	--	--	--	70
JUN 25...	0	20	0	0	0	13	4	9	830	750	80
JUL 23...	--	--	--	--	--	--	--	--	--	--	150
AUG 27...	--	--	--	--	--	--	--	--	--	--	100
SEP 24...	0	20	1	1	0	4	4	0	500	420	80

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI)
OCT 11...	--	--	--	--	--	--	--	--	--	--	--
NOV 08...	--	--	--	--	--	--	--	--	--	--	--
DEC 04...	5	4	1	60	20	40	.0	.0	.0	5	5
JAN 17...	--	--	--	--	--	--	--	--	--	--	--
FEB 27...	--	--	--	--	--	--	--	--	--	--	--
MAR 26...	4	4	0	170	50	120	.0	.0	.1	5	3
APR 29...	--	--	--	--	--	--	--	--	--	--	--
MAY 28...	--	--	--	--	--	--	--	--	--	--	--
JUN 25...	6	3	3	180	120	60	.0	.0	.1	16	11
JUL 23...	--	--	--	--	--	--	--	--	--	--	--
AUG 27...	--	--	--	--	--	--	--	--	--	--	--
SEP 24...	5	4	1	210	190	20	.2	.1	.1	7	7

DATE	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 11...	--	--	--	--	--	--	--	--	--	--
NOV 08...	--	--	--	--	--	--	--	--	--	--
DEC 04...	0	2	0	3	0	0	0	30	0	30
JAN 17...	--	--	--	--	0	--	--	--	--	--
FEB 27...	--	--	--	--	--	--	--	--	--	--
MAR 26...	2	2	0	2	0	0	0	80	50	30
APR 29...	--	--	--	--	1	--	--	--	--	--
MAY 28...	--	--	--	--	--	--	--	--	--	--
JUN 25...	5	2	0	2	0	0	0	130	90	40
JUL 23...	--	--	--	--	0	--	--	--	--	--
AUG 27...	--	--	--	--	--	--	--	--	--	--
SEP 24...	0	2	0	2	0	0	0	50	0	150

08407500 PECOS RIVER AT RED BLUFF, NM--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	PCB TOTAL (UG/L)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	CHLORDANE, TOTAL (UG/L)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG)
NOV											
08...	1035	ND	--	ND	--	ND	--	ND	--	ND	--
08...	1335	--	ND	--	ND	--	ND	--	ND	--	ND
FEB											
27...	0930	ND	--	ND	--	ND	--	ND	--	ND	--

DATE	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIAZINON, TOTAL (UG/L)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIELDRIN TOTAL (UG/L)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ETHION, TOTAL (UG/L)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR, TOTAL (UG/L)
NOV											
08...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
08...	--	ND	--	ND	--	ND	--	ND	--	ND	--
FEB											
27...	ND	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)	MALATHION, TOTAL (UG/L)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	METHOXYCHLOR, TOTAL (UG/L)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARATHION, TOTAL (UG/L)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG)
NOV											
08...	--	ND	--	ND	--	ND	--	ND	--	ND	--
08...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
FEB											
27...	--	ND	--	ND	--	ND	--	ND	--	ND	--

DATE	METHYL TRITHION, TOTAL (UG/L)	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG)	PARATHION, TOTAL (UG/L)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	TOXAPHENE, TOTAL (UG/L)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	TOTAL TRITHION (UG/L)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
NOV											
08...	ND	--	ND	--	ND	--	ND	--	ND	ND	ND
08...	--	ND	--	ND	--	ND	--	ND	--	--	--
FEB											
27...	ND	--	ND	--	ND	--	ND	--	--	--	--

08407500 PECOS RIVER AT RED BLUFF, NM--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9610	12600	10300	9110	8850	9910	15100	13900	13600	19100	21400	19500
2	9730	12200	10200	8870	9000	10000	14800	14300	14100	19100	21600	19500
3	9920	12300	9910	9030	8940	10300	14100	14200	14400	19200	21600	19900
4	10200	11400	10000	8870	8980	10300	13300	14100	14400	19600	21500	19900
5	10400	10800	10000	9030	9020	10400	12900	14800	14400	20000	21500	19900
6	10700	10000	10100	9030	8940	10600	13000	14800	14700	20100	21500	19900
7	11000	9970	10100	8870	8910	10400	13500	14500	15300	20300	19500	20000
8	11100	9550	10000	8870	8800	10700	13700	14400	14900	20500	21700	20100
9	11200	9330	10200	8870	8840	11300	13600	13500	15300	20700	21700	16500
10	11500	9780	10100	9030	8800	11600	13500	13500	14800	20900	21700	7950
11	11900	10500	10200	8870	9210	11200	13600	13000	15200	20800	21500	4950
12	10500	10900	9910	8720	8710	11100	13400	12800	15500	20600	21300	15600
13	10000	11800	9730	8720	8250	11400	13200	12700	15800	20400	20500	14800
14	10300	11700	9910	9030	8330	11800	12100	12700	15800	20700	19700	11000
15	10000	11000	10000	8870	8480	12100	12000	9260	15800	20700	19700	11000
16	9970	10800	9150	8720	8190	12400	11900	9350	16300	21200	20100	11100
17	10100	10800	9640	8720	8190	12600	12000	13200	16800	21700	20100	11600
18	10200	10600	9560	8790	9860	13400	12600	9260	17100	21800	20000	12200
19	10300	10400	9400	8870	8440	14300	12600	8600	17300	21300	19600	12100
20	10200	10400	8720	8640	8530	14400	12300	8120	17400	21100	19800	12200
21	10300	11000	8640	8640	8510	14000	12400	8120	17400	20700	20100	12900
22	10700	11000	8710	8640	8680	13800	13000	8940	17600	20500	20100	13000
23	11200	11300	8930	8640	9380	13900	14000	9370	18100	20600	19900	12500
24	11200	11200	8930	8430	9400	14500	[illegible]	10200	18400	20900	19100	12400
25	11300	11300	9150	8640	9650	15100	15300	10600	18500	21100	18700	12400
26	11800	10400	9390	8790	9170	15100	15100	12100	18500	21200	18700	2420
27	11800	10200	9390	8640	9070	15300	14400	12100	18800	21200	18700	623
28	12200	10400	8930	8720	9330	15900	13900	12600	19300	21600	18900	894
29	12400	10600	9080	8790	9570	16300	13900	13000	19700	21600	19100	4260
30	11900	10400	9080	8790	---	15800	14100	13100	19600	21100	19200	6560
31	12200	---	9010	8870	---	14900	---	13300	---	21100	19100	---
MEAN	10800	10800	9560	8810	8900	12700	13500	12100	16500	20700	20200	12600

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.0	13.5	5.5	7.5	5.5	12.5	17.0	23.0	24.0	28.5	28.5	27.0
2	23.5	12.5	5.0	8.0	6.5	12.0	17.5	24.0	23.0	28.0	27.0	27.0
3	23.5	12.5	5.5	8.5	7.5	12.0	18.0	20.0	27.0	30.5	30.0	26.0
4	22.0	13.5	6.0	8.5	9.5	12.0	18.0	21.5	28.5	29.5	27.0	26.5
5	22.5	14.5	6.5	8.0	10.5	13.5	20.0	23.5	28.0	26.5	27.0	26.0
6	22.0	13.0	7.0	7.5	11.0	15.0	20.5	24.0	28.0	28.0	27.0	25.5
7	22.5	13.0	7.5	7.0	8.0	14.0	20.0	25.0	30.0	28.0	27.5	26.0
8	22.0	14.0	7.5	7.0	6.0	15.5	20.0	25.0	23.0	30.5	28.5	26.0
9	19.0	14.5	8.0	7.5	6.5	15.5	20.5	24.5	22.5	29.5	27.0	23.0
10	20.0	13.5	9.5	8.0	6.5	14.5	20.0	24.5	24.0	27.0	27.5	20.5
11	20.0	12.0	10.0	8.0	7.0	16.0	16.0	23.0	25.5	29.5	22.5	23.5
12	20.0	11.5	9.0	8.0	6.0	16.0	14.0	23.5	26.5	29.5	22.5	25.0
13	19.0	11.0	7.0	10.0	9.5	16.0	15.5	24.0	28.0	29.0	24.5	25.5
14	20.5	10.5	7.5	11.0	9.5	16.0	18.0	20.0	26.0	30.5	25.5	26.0
15	21.5	10.0	7.0	11.5	11.0	17.0	18.0	20.0	28.5	30.5	28.0	27.0
16	22.0	11.5	6.5	11.5	10.5	16.0	20.0	21.0	28.5	28.0	30.0	27.5
17	20.0	11.5	5.5	11.0	8.0	16.0	21.5	22.0	28.0	28.5	28.5	27.0
18	21.0	13.0	5.0	11.0	10.5	13.5	22.0	25.0	28.0	27.5	28.0	26.0
19	20.5	13.0	6.0	11.5	12.0	14.5	22.0	24.0	28.0	27.5	26.0	25.0
20	20.0	13.5	7.0	9.5	13.0	16.5	22.0	25.5	26.0	27.5	28.5	25.0
21	20.0	12.0	8.5	9.0	14.0	16.5	22.0	26.0	27.0	27.0	27.0	24.5
22	19.5	10.5	10.0	8.5	14.5	17.0	22.0	27.0	28.0	25.5	27.5	21.0
23	18.5	9.0	9.0	8.0	15.0	15.5	23.0	26.5	27.0	28.5	28.0	20.5
24	18.0	8.0	8.5	8.0	15.0	15.0	21.5	26.5	28.0	29.5	28.0	22.0
25	18.0	9.5	9.0	8.5	14.5	17.0	19.5	26.5	28.5	28.0	28.0	24.0
26	18.5	9.0	8.0	6.5	14.0	18.0	20.0	26.5	27.5	29.5	27.0	15.0
27	18.5	8.5	8.5	6.0	15.0	17.5	21.0	24.5	27.5	26.5	24.5	14.0
28	18.0	8.5	8.5	7.0	15.5	18.5	22.5	26.0	27.5	27.5	27.5	14.0
29	17.5	7.5	8.0	5.5	16.0	17.0	23.5	26.0	27.0	27.5	27.5	26.0
30	14.0	5.5	8.0	6.0	---	17.5	22.5	26.0	29.0	28.0	27.5	28.5
31	13.5	---	8.0	5.5	---	17.0	---	26.5	---	27.5	27.5	---
MEAN	20.0	11.5	7.5	8.5	10.5	15.5	20.0	24.0	27.0	28.5	27.0	24.0

08408500 DELAWARE RIVER NEAR RED BLUFF, NM

LOCATION.--Lat 32°01'23", long 104°03'15", in NE1/4SW1/4SE1/4 sec.23, T.26 S., R.28 E., Eddy County, Hydrologic Unit 13070002, near center of channel on downstream side of pier of bridge on U.S. Highway 285, 2.1 mi (3.4 km) north of the New Mexico-Texas State line, 3.6 mi (5.8 km) southwest of Red Bluff, 3.7 mi (6.0 km) upstream from mouth, 14 mi (23 km) south of Malaga, and 405.6 mi (652.6 km) upstream from mouth.

DRAINAGE AREA.--689 mi^2 (1,785 km^2).

PERIOD OF RECORD.--April 1912 to September 1913, May 1914 to June 1915, October 1937 to current year. Published as "near Malaga, N. Mex." 1912-13, and as "near Angeles, Tex." 1914-15.

GAGE.--Water-stage recorder. Datum of gage is 2,900.66 ft (884.121 m) National Geodetic Vertical Datum of 1929. Prior to May 1914, at site 3.0 mi (4.8 km) upstream at different datum. May 1914 to June 1915 at site 2.5 mi (4.0 km) downstream at different datum.

REMARKS.--Records fair. One small upstream diversion. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--43 years (water years 1938-80), 13.5 ft^3/s (0.382 m^3/s), 9,780 acre-ft/yr (12.1 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 81,400 ft^3/s (2,310 m^3/s) Oct. 2, 1955, gage height, 27.0 ft (8.23 m), from floodmarks, from rating curve extended above 1,500 ft^3/s (42.5 m^3/s) on basis of slope-area measurements at gage heights 8.65, 12.84, 18.00, and 27.0 ft (2.637, 3.914, 5.486, and 8.230 m); no flow for many days most years.

Maximum discharge since at least 1911, that of Oct. 2, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,020 ft^3/s (57.2 m^3/s) Sept. 27, gage height, 4.80 ft (1.463 m), no other peak above base of 1,700 ft^3/s (48.1 m^3/s); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	4.6	5.2	5.6	6.4	5.6	5.3	4.5	2.1	.00	.00	.40
2	.00	5.2	5.4	6.0	6.4	5.3	5.3	4.5	2.1	.00	.00	.40
3	.00	5.8	5.6	5.6	6.0	5.6	5.3	5.6	2.0	.00	.00	.40
4	.00	6.1	5.9	5.6	5.8	6.0	5.3	7.6	1.6	.00	.00	.40
5	.00	6.4	6.2	5.6	5.6	6.0	5.6	6.4	1.2	.00	.00	.40
6	.00	6.1	6.1	5.6	5.5	5.6	6.0	15	1.2	.00	.00	.40
7	.00	6.6	5.7	5.6	5.8	5.6	6.4	12	.40	.00	.00	.40
8	.00	6.7	5.3	5.3	5.4	5.6	6.0	7.2	16	.00	.00	.40
9	.00	6.5	5.2	5.3	5.6	4.9	6.4	6.0	3.9	3.4	.00	10
10	.00	6.4	5.5	5.3	5.8	5.3	6.4	5.3	4.4	37	.00	2.0
11	.00	6.3	6.1	5.3	6.0	4.5	6.8	4.9	4.6	8.6	.00	1.0
12	.00	5.7	6.7	5.3	6.0	4.1	6.4	4.5	3.4	2.7	2.0	1.0
13	.00	5.7	9.0	5.6	5.8	3.7	6.8	4.1	2.1	.91	1.0	1.0
14	.00	6.1	10	6.0	6.1	3.7	6.0	3.7	1.2	.00	.50	.50
15	.00	6.1	8.9	6.0	6.2	3.7	6.0	18	.65	.00	.50	.50
16	.00	6.4	7.1	5.6	5.6	4.1	5.3	13	.40	.00	.50	.50
17	.00	6.9	5.9	5.3	5.7	3.7	5.3	6.4	.16	.00	.50	.50
18	.00	7.1	5.2	5.6	6.3	3.0	5.3	5.3	.40	.00	.50	.50
19	.00	6.4	5.9	5.6	6.7	3.4	5.6	4.1	.40	.00	5.0	1.0
20	.00	6.3	4.4	5.6	6.1	4.5	4.9	3.7	7.2	.00	2.0	1.0
21	.00	6.2	2.9	5.6	5.5	5.3	4.9	3.7	25	.00	.50	1.0
22	.00	6.0	2.9	8.5	5.4	5.3	4.9	3.7	3.3	.00	.50	2.0
23	.00	5.6	2.6	8.5	5.5	5.3	4.9	3.4	1.8	.00	.50	2.0
24	.00	6.0	2.3	7.6	5.6	4.9	4.5	2.7	1.2	.00	.50	2.0
25	4.3	6.3	2.2	6.4	5.6	4.9	4.9	2.0	.65	.00	.50	200
26	4.5	6.0	2.5	6.4	6.0	5.3	4.9	1.8	.69	.00	.40	800
27	4.1	5.4	2.6	6.0	6.0	5.6	4.9	3.0	.40	.00	.40	1200
28	4.1	5.4	2.7	5.6	6.4	5.3	4.9	3.5	.00	.00	.40	800
29	4.4	4.7	2.6	6.0	6.8	4.9	4.9	3.6	.00	.00	.40	200
30	4.3	5.1	2.8	6.0	---	5.3	4.9	2.9	.00	.00	.40	50
31	4.2	---	3.0	6.7	---	5.3	---	2.5	---	.00	.40	---
TOTAL	29.90	180.1	154.4	184.7	171.6	151.3	165.0	174.6	88.45	52.61	17.40	3279.70
MEAN	.96	6.00	4.98	5.96	5.92	4.88	5.50	5.63	2.95	1.70	.56	109
MAX	4.5	7.1	10	8.5	6.8	6.0	6.8	18	25	37	5.0	1200
MIN	.00	4.6	2.2	5.3	5.4	3.0	4.5	1.8	.00	.00	.00	.40
AC-FT	59	357	306	366	340	300	327	346	175	104	35	6510

CAL YR 1979 TOTAL 3951.45 MEAN 10.8 MAX 623 MIN .00 AC-FT 7840
WTR YR 1980 TOTAL 4649.76 MEAN 12.7 MAX 1200 MIN .00 AC-FT 9220

08410000 RED BLUFF RESERVOIR NEAR ORLA, TX

LOCATION.--Lat 31°54'04", long 103°54'35", Reeves County, Hydrologic Unit 13070001, at right end of Red Bluff Dam on the Pecos River, 2.8 mi (4.5 km) upstream from Salt Creek, and 5.2 mi (8.4 km) north of Orla.

DRAINAGE AREA.--20,720 mi² (53,660 km²), approximately (contributing area).

PERIOD OF RECORD.--February 1937 to current year. Monthly contents only for some periods, published in WSP 1312.

GAGE.--Nonrecording gage. Datum of gage is 0.43 ft (0.131 m) below National Geodetic Vertical Datum of 1929.

REMARKS.--The reservoir is formed by a rock-faced earthfill dam 9,200 ft (2,800 m) long. The dam was completed and storage began in September 1936. The dam and reservoir are owned and operated by the Red Bluff Water Power Control District. The water is used for power development and for irrigation from Mentone to Grandfalls. The uncontrolled emergency spillway, 790 ft (241 m) wide, is a cut through natural ground located to the right of right end of dam. The controlled service spillway is equipped with 12 tainter gates that are 25 by 15 ft (8 by 5 m) high. Inflow is partly regulated by storage in Lake Sumner, Lake McMillan, and Lake Avalon, total combined capacity 154,400 acre-ft (190 hm³), and by several small diversion dams that divert water for power or irrigation. The capacity curve is based on Geological Survey topographic map, survey of 1925. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Top of dam	2,856.0	-
Crest of spillway	2,845.0	340,000
Top of gates (top of conservation pool)	2,842.0	310,000
Crest of spillway	2,827.0	166,500
Lowest gated outlet (invert)	2,764.0	3,000

COOPERATION.--Gage-height records and capacity curve were furnished by the Red Bluff Water Power and Control District.

EXTREMES (at 0800) FOR PERIOD OF RECORD.--Maximum contents observed, 352,000 acre-ft (434 hm³) Sept. 27, 28, 1941, gage height, 2,846.2 ft (867.52 m), observed on nonrecording gage at service spillway (affected by variable drawdown due to flow through tainter gates); minimum observed, 11,080 acre-ft (13.7 hm³) May 13, 1948, gage height, 2,781.4 ft (847.77 m).

EXTREMES (at 0800) FOR CURRENT YEAR.--Maximum contents observed, 85,400 acre-ft (105 hm³) Mar. 11-21, gage height, 2,813.2 ft (857.46 m); minimum observed, 33,980 acre-ft (41.9 hm³) Sept. 9, gage height, 2,797.8 ft (852.77 m).

Capacity table (gage height, in feet, and total contents, in acre-feet)

2,797.0	32,300
2,805.0	53,000
2,814.0	89,000

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	83600	73100	74700	78650	82250	84950	84950	74700	70700	61750	44600	34620
2	83150	73100	75100	78650	82250	84950	84950	74300	69900	61400	44000	34620
3	82250	73100	75100	79100	82700	84950	84950	74300	69100	61400	43000	34620
4	81350	73100	75100	79100	82700	84950	84950	74300	68300	61050	42500	34400
5	80450	73100	75100	79100	82700	84950	84950	73900	67500	60700	41750	34400
6	80000	73100	75100	79100	82700	84950	84500	73900	66700	60350	41000	34190
7	79100	73100	75500	79100	82700	84950	84500	73900	65900	60000	40250	34190
8	78200	73100	75500	79550	83150	84950	84500	73900	65900	59650	39500	34190
9	77750	73100	75500	79550	83150	84950	84500	73900	65900	59300	38760	33980
10	76850	73500	75500	79550	83150	84950	84050	73900	65500	58950	38040	34400
11	75950	73500	75500	79550	83150	85400	83600	73500	65500	58600	37320	34620
12	75500	73500	75950	80000	83600	85400	82700	73500	65500	58250	36600	34840
13	74700	73500	76400	80000	83600	85400	81800	73500	65100	57900	35940	34840
14	73900	73500	76400	80000	83600	85400	81350	73100	65100	57900	35720	34840
15	73100	73900	76400	80000	83600	85400	80900	73100	65100	57550	35720	35060
16	73100	73900	76400	80000	83600	85400	80000	73500	65100	57200	35720	35280
17	73100	73900	76850	80450	83600	85400	79100	73500	64700	56850	35720	35060
18	73100	73900	76850	80450	84050	85400	78650	73500	64700	56150	35720	35060
19	73100	73900	76850	80450	84050	85400	77750	73500	64700	55100	35500	35060
20	73100	73900	76850	80900	84050	85400	77300	73100	64300	54400	35500	35060
21	73100	74300	77300	80900	84500	85400	76400	73100	64300	53700	35500	35060
22	73100	74300	77300	80900	84500	84950	75950	73100	63900	52700	35500	35060
23	73100	74300	77300	80900	84500	84950	75500	72700	63500	51800	35500	34840
24	73100	74300	77750	81350	84500	84950	75500	72700	63500	51200	35280	34840
25	73100	74300	77750	81350	84500	84950	75100	72300	63500	50600	35280	34840
26	73100	74300	77750	81350	84950	84950	75100	72300	63150	49700	35280	38280
27	73100	74700	78200	81800	84950	84950	75100	71900	62800	49100	35060	50900
28	73100	74700	78200	81800	84950	84950	74700	71500	62450	48200	35060	64300
29	73100	74700	78200	81800	84950	84950	74700	71500	62450	47300	35060	66700
30	73100	74700	78200	81800	---	84950	74700	71500	62100	46400	34840	67100
31	73100	---	78200	82250	---	84950	---	71100	---	45500	34840	---
MAX	83600	74700	78200	82250	84950	85400	84950	74700	70700	61750	44600	67100
MIN	73100	73100	74700	78650	82250	84950	74700	71100	62100	45500	34840	33980
(†)	2810.4	2810.8	2811.6	2812.5	2813.1	2813.1	2810.8	2809.9	2807.6	2802.5	2798.2	2808.9
(‡)	-10500	+1600	+3500	+4050	+2700	0	-10250	-3600	-9000	-16600	-10660	+32260

CAL YR 1979 MAX 110600 MIN 73100 ‡ -27500
WTR YR 1980 MAX 85400 MIN 33980 ‡ -16500

† Gage height, in feet, at end of month.
‡ Change in contents, in acre-feet.

08412500 PECOS RIVER NEAR ORLA, TX

LOCATION.--Lat 31°52'21", long 103°49'52", Reeves County, Hydrologic Unit 13070001, on right bank at bridge on Farm Road 652, 5.5 mi (8.8 km) downstream from Salt Creek (Screw Bean Arroyo), 5.9 mi (9.5 km) northeast of Orla, and 8.5 mi (13.7 km) downstream from Red Bluff Reservoir.

DRAINAGE AREA.--21,210 mi^2 (54,930 km^2), approximately (contributing area).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1937 to current year.

REVISED RECORDS.--WSP 928: 1937.

GAGE.--Water-stage recorder. Datum of gage is 2,730.86 ft (832.366 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 16, 1969, at site 6.9 mi (11.1 km) downstream at datum 12.81 ft (3.904 m) lower.

REMARKS.--Water-discharge records fair. Most of flow is released from storage in Red Bluff Reservoir (station 08410000). Occasional runoff from draws between dam and station. Many diversions above Red Bluff Reservoir for irrigation.

AVERAGE DISCHARGE.--43 years (water years 1938-80), 169 ft^3/s (4.786 m^3/s), 122,400 acre-ft/yr (151 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,700 ft^3/s (671 m^3/s) Sept. 29, 1941, gage height, 20.74 ft (6.322 m), site and datum then in use; no flow at times in 1946 and 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,030 ft^3/s (57.5 m^3/s) Sept. 26 at 2400 hours, gage height, 14.62 ft (4.456 m); minimum daily, 9.1 ft^3/s (0.26 m^3/s) Mar. 18, 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	113	28	13	13	15	10	11	65	283	110	301	40
2	348	28	13	13	15	10	12	65	293	110	299	38
3	371	29	14	13	16	10	11	67	293	111	296	38
4	371	30	14	13	15	12	12	68	293	111	295	38
5	371	30	15	14	14	12	12	70	292	110	293	38
6	371	29	15	14	13	12	13	73	291	110	290	38
7	371	30	15	13	13	11	13	42	237	109	290	37
8	371	20	14	13	13	11	12	39	43	109	286	38
9	371	16	14	13	13	10	97	39	50	108	281	56
10	371	16	15	13	14	10	407	38	44	108	277	66
11	371	15	15	13	23	11	406	38	41	108	274	42
12	371	14	16	14	21	11	402	38	40	110	277	40
13	371	15	16	15	13	11	405	39	40	110	253	41
14	371	15	22	14	14	12	407	40	40	110	106	43
15	327	15	24	14	14	11	405	49	40	110	69	43
16	54	15	18	13	12	10	402	81	40	111	60	43
17	43	16	16	13	11	9.5	399	82	40	172	55	42
18	40	17	15	13	12	9.1	397	79	38	291	51	41
19	37	17	14	12	14	9.2	397	79	39	297	48	40
20	35	17	14	13	14	9.8	397	78	60	296	46	40
21	33	16	14	13	12	10	355	77	56	295	42	39
22	31	16	14	17	11	9.9	51	77	56	292	44	37
23	31	16	14	19	9.8	10	70	78	57	296	44	38
24	30	15	14	19	9.7	9.1	69	76	55	316	43	40
25	31	13	14	17	9.7	10	66	76	58	316	42	46
26	31	13	13	15	10	11	66	77	104	314	43	876
27	30	13	13	14	11	11	67	78	115	312	45	1230
28	29	13	13	14	11	11	67	79	110	310	44	234
29	29	11	13	14	11	10	80	78	111	308	42	107
30	26	12	13	14	---	11	68	78	111	305	42	57
31	27	---	13	15	---	11	---	110	---	304	41	---
TOTAL	5777	550	460	437	384.2	325.6	5576	2053	3370	6179	4619	3544
MEAN	186	18.3	14.8	14.1	13.2	10.5	186	66.2	112	199	149	118
MAX	371	30	24	19	23	12	407	110	293	316	301	1230
MIN	26	11	13	12	9.7	9.1	11	38	38	108	41	37
AC-FT	11460	1090	912	867	762	646	11060	4070	6680	12260	9160	7030

CAL YR 1979 TOTAL 33099.0 MEAN 90.7 MAX 612 MIN 11 AC-FT 65650
WTR YR 1980 TOTAL 33274.8 MEAN 90.9 MAX 1230 MIN 9.1 AC-FT 66000

08412500 PECOS RIVER NEAR ORLA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses July 1937 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1937 to current year.
WATER TEMPERATURES: March 1953 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equation developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 29,400 micromhos May 16, 1978; minimum daily, 1,610 micromhos June 2, 1948.
WATER TEMPERATURES (1953-61, 1968-80): Maximum daily, 31.0°C Aug. 13, 1978; minimum daily, 0.5°C Jan. 6, 1971, Jan. 11, 1973, and Dec. 11, 1978.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 24,300 micromhos Apr. 8; minimum daily, 4,060 micromhos Sept. 27.
WATER TEMPERATURES: Maximum daily, 27.0°C on several days during July and August; minimum daily, 1.0°C Dec. 1.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
OCT 23...	1030	30	14200	8.0	14.0	2300	2200	530	230	2600
NOV 12...	0940	14	22300	--	10.0	3900	3800	950	370	3400
JAN 15...	1525	14	22700	--	12.5	4500	4400	1300	310	4000
FEB 11...	0840	14	21900	--	4.0	3500	3400	860	330	4000
APR 17...	1630	400	10000	--	18.0	2000	2000	540	170	1400
MAY 28...	1245	80	10900	7.5	22.0	2200	2100	580	190	1700
JUL 10...	1630	109	11200	--	27.0	2400	2300	610	210	1800
AUG 21...	1540	42	14100	--	28.5	2700	2600	700	240	2400

DATE	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
OCT 23...	24	44	130	0	2200	4100	.5	9.0	9780
NOV 12...	24	52	160	0	1800	6700	1.3	6.8	13400
JAN 15...	26	42	170	0	3100	7000	1.1	6.4	15800
FEB 11...	29	41	170	0	2900	6800	1.8	7.7	15000
APR 17...	13	45	120	0	1700	2400	.7	3.2	6320
MAY 28...	16	46	130	0	1800	2900	.8	3.0	7280
JUL 10...	16	57	110	0	2000	3100	.4	13	7840
AUG 21...	20	67	120	0	2200	4300	.9	10	10100

08412500 PECOS RIVER NEAR ORLA, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	5777	9590	6340	98800	2500	38900	1500	24200	1800
NOV.	1979	550	19200	13200	19700	5700	8520	2700	4020	*
DEC.	1979	460	22600	15700	19500	7000	8670	3000	3790	*
JAN.	1980	437	22700	15800	18700	7000	8310	3100	3620	*
FEB.	1980	384.2	22500	15600	16200	6900	7200	3000	3150	*
MAR.	1980	325.6	23200	16200	14200	7200	6340	3100	2730	*
APR.	1980	5576	10700	7110	107000	2800	42700	1700	25500	*
MAY	1980	2053	11300	7510	41600	3000	16600	1800	9930	*
JUNE	1980	3370	10900	7210	65600	2900	26100	1700	15700	*
JULY	1980	6179	11400	7550	126000	3000	50300	1800	30000	*
AUG.	1980	4619	12600	8440	105000	3400	42700	2000	24500	*
SEPT	1980	3544	9280	6170	59100	2500	23700	1500	14000	1700
TOTAL		33274.8	**	**	692000	**	280000	**	161000	**
WTD. AVG.		91	11500	7700	**	3100	**	1800	**	**

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8940	14900	22000	22900	22700	22400	23700	11300	10300	11000	11600	14300
2	10100	15000	22200	23100	22800	22600	23900	11300	10400	11100	11700	15000
3	9000	15100	22500	23000	22900	22700	24200	11200	10400	11100	11800	15100
4	8940	15200	22600	23000	23000	22800	23800	11500	10400	11100	11700	14800
5	9130	15300	22300	22900	23200	22700	23800	11800	10400	11200	11800	14700
6	9000	15500	22400	23000	22700	22900	23900	11700	10400	11100	11800	14500
7	9060	15300	22500	22900	22500	23200	23800	13100	10400	11100	12300	14600
8	9000	15500	22300	23000	22400	23000	24300	11400	11700	11100	12200	14200
9	9200	20100	22000	22900	22500	22900	22500	11600	11900	11300	12000	14300
10	8980	22200	22100	22500	22400	22900	9960	11600	14100	11200	12100	15000
11	9100	22600	22000	22900	22400	22800	9980	11600	13100	11200	12100	14200
12	9070	22200	22200	22800	22600	22900	9920	11700	12900	11300	12100	13700
13	9100	22000	20700	22900	18400	22900	10100	11700	12500	11600	13300	15500
14	9150	21300	21200	21300	22400	23000	10200	11800	12400	11400	17000	16800
15	9060	22200	22500	22600	22600	23300	10100	11900	12100	11400	16700	16900
16	10900	22100	23500	22700	22800	23100	10100	11300	11800	11500	16200	16800
17	14000	22200	23100	22900	22700	22900	10300	11400	11500	11400	15400	16300
18	14100	21900	22800	22800	22400	23100	10000	11300	11500	11200	15100	16000
19	14200	22200	22600	22600	22300	23200	10100	11200	11400	11300	14800	15700
20	14500	22300	22700	22800	22500	23600	10000	11100	11100	11300	14500	15400
21	14400	22200	23500	22700	22900	23200	10500	11200	11300	11300	14700	15200
22	14500	22100	23900	22300	22700	23300	11900	11300	11400	11300	14600	15000
23	14200	22000	23600	22000	22600	23600	11500	11200	11400	11400	14500	14700
24	14300	21900	23400	22900	22500	23700	11400	11100	11400	11400	14900	14500
25	14500	21800	23200	23200	22500	23600	11300	11100	11400	11400	14600	14800
26	14700	22100	23100	23000	22400	23500	11300	11000	11100	11500	14100	8000
27	14800	22000	23000	22900	22500	23600	11400	11000	11100	11500	13900	4060
28	14900	22200	22900	22800	22600	23700	11400	10900	11000	11500	14300	12200
29	15000	22100	22700	22700	22800	23600	11200	11000	11000	11500	14200	14100
30	15100	22200	22800	22600	---	23800	11400	11000	11000	11600	14200	13600
31	15000	---	23000	22900	---	24000	---	10600	---	11500	14100	---
MEAN	11800	20200	22600	22800	22500	23200	14600	11400	11400	11300	13700	14300

08412500 PECOS RIVER NEAR ORLA, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	10.0	1.0	6.0	4.5	9.0	16.0	18.0	23.0	24.0	25.0	26.0
2	---	10.0	2.0	6.0	5.0	8.0	15.0	16.0	22.5	24.5	25.0	26.0
3	---	10.0	5.0	7.0	6.0	8.0	14.0	17.0	22.0	25.0	26.0	26.0
4	---	15.0	5.0	8.0	7.0	10.0	14.0	17.0	22.5	25.0	25.0	26.0
5	---	12.0	6.0	6.0	9.0	11.0	15.0	17.0	23.0	25.0	26.0	26.0
6	---	11.0	5.0	7.0	9.0	12.0	17.0	18.0	22.5	25.0	26.0	26.0
7	---	11.0	6.0	5.0	10.0	13.0	16.0	19.0	23.5	25.0	26.0	---
8	---	12.0	7.0	5.0	8.0	13.0	15.0	19.5	24.0	25.0	---	26.0
9	---	13.0	8.0	6.0	4.0	12.0	15.0	19.5	22.0	27.0	26.0	26.0
10	---	11.0	---	6.0	4.0	12.0	13.0	18.5	23.0	26.0	25.5	22.0
11	---	10.0	9.0	9.0	4.0	13.0	17.0	18.0	24.0	25.0	25.0	23.0
12	---	10.0	7.0	7.0	5.0	13.0	13.0	17.5	24.5	25.0	25.0	24.0
13	---	9.0	8.0	9.0	4.0	13.0	11.0	18.0	25.0	25.0	25.0	25.0
14	---	9.0	6.0	10.0	9.0	12.0	12.0	18.5	25.0	25.0	24.0	24.0
15	---	8.0	5.0	11.0	11.0	13.0	13.0	19.0	24.0	25.0	27.0	25.0
16	---	9.0	5.0	13.0	10.0	14.0	13.0	17.5	26.5	26.0	27.0	25.0
17	17.0	9.0	4.0	10.0	6.0	11.0	14.0	17.5	26.5	25.0	27.0	24.0
18	18.0	11.0	3.0	10.0	6.0	10.0	13.0	18.0	26.5	25.0	27.0	24.0
19	19.0	12.0	6.0	11.0	11.0	10.5	14.0	18.5	26.5	27.0	26.0	---
20	18.0	11.0	7.0	9.0	12.0	12.0	15.0	19.0	25.0	25.0	25.0	24.0
21	18.0	10.0	8.0	8.0	12.0	13.0	15.0	20.0	24.5	25.0	27.0	24.0
22	16.0	5.0	10.0	---	12.0	13.0	16.0	20.0	25.0	26.0	26.0	24.5
23	19.0	6.0	10.0	4.0	12.0	12.0	16.0	19.0	26.0	26.5	26.0	22.0
24	14.0	6.0	8.0	6.0	12.0	13.0	14.0	---	26.0	25.5	26.0	23.0
25	14.0	7.0	7.0	6.0	12.0	12.0	14.0	19.0	25.5	26.0	26.0	23.0
26	14.0	8.0	---	7.0	11.0	13.0	---	19.0	24.0	26.0	25.0	20.5
27	14.5	9.0	7.0	6.0	11.0	13.0	16.5	20.5	24.5	25.0	26.0	18.0
28	14.5	9.0	9.0	---	13.0	14.0	15.0	22.0	24.0	25.5	25.0	19.0
29	16.0	4.0	---	6.0	13.0	12.0	16.0	21.5	24.0	26.0	25.0	19.0
30	12.0	3.0	5.0	5.0	---	14.0	17.0	19.5	24.0	25.0	26.0	20.0
31	10.0	---	4.0	5.0	---	14.0	---	22.0	---	25.0	27.0	---
MEAN	15.5	9.5	6.0	7.5	8.5	12.0	14.5	19.0	24.5	25.5	26.0	23.5

08414500 REEVES COUNTY WATER IMPROVEMENT DISTRICT NO. 2 CANAL NEAR MENTONE, TX

LOCATION.--Lat 31°37'57", long 103°34'30", Loving County, Hydrologic Unit 13070001, on right bank 173 ft (53 m) downstream from headgate, 5.3 mi (8.5 km) south of Mentone, and 15 mi (24 km) northwest of Pecos.

PERIOD OF RECORD.--February 1922 to July 1925, August 1939 to May 1941, March 1942 to September 1957, and March 1964 to current year. Records from August 1939 to October 1940, not equivalent because diversion was not included. Published as "Farmers Independent Canal near Porterville" 1922-25.

GAGE.--Water-stage recorder. Concrete weir since Mar. 1, 1964. Altitude of gage is 2,640 ft (805 m), from topographic map. Prior to July 22, 1925, at site 250 ft (76 m) downstream at different datum. Mar. 10, 1939, to Oct. 4, 1940, at site 2.5 mi (4.0 km) downstream at different datum. Oct. 5, 1940, to Feb. 19, 1943, at site 123 ft (37 m) upstream at datum 1.10 ft (0.335 m) higher. Feb. 20, 1943, to Mar. 1, 1954, at site 123 ft (37 m) upstream at present datum.

REMARKS.--Records good. Local runoff is deleted from daily discharge record. Water is diverted from right bank of Pecos River and is used for irrigation between Mentone and Pecos.

AVERAGE DISCHARGE.--34 years (water years 1923-24, 1940, 1943-57, 1965-80), 8.63 ft³/s (0.244 m³/s), 6,250 acre-ft/yr (7.71 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 160 ft³/s (4.53 m³/s) June 14, 1922; no flow at times each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	.02	.02	.00	.00	.00	.00	9.8	8.8	5.5	17	18
2	4.5	.02	.02	.00	.00	.00	.00	11	8.7	5.5	17	18
3	5.5	.02	.02	.00	.00	.00	.00	10	.08	5.5	15	16
4	5.5	.02	.02	.00	.00	.00	.00	9.3	.01	5.2	12	8.7
5	3.2	.01	.02	.00	.00	.00	.00	9.3	.00	5.2	11	5.4
6	4.6	.02	.02	.00	.00	.00	.00	8.8	.00	4.9	5.3	5.2
7	6.6	.02	.02	.00	.00	.00	.00	5.9	.00	4.8	.01	5.2
8	5.9	.02	.02	.00	.00	.00	.00	5.2	.00	4.7	.00	5.4
9	4.4	.02	.02	.00	.00	.00	.00	5.2	.00	4.6	.00	9.4
10	.14	.02	.02	.00	.00	.00	.00	5.2	.00	4.8	.00	9.7
11	.14	.02	.02	.00	.00	.00	.02	7.9	.00	4.8	.00	11
12	.14	.02	.02	.00	.00	.00	.00	10	.00	4.8	.00	12
13	.14	.02	.02	.00	.00	.00	.02	10	.00	4.8	.00	14
14	.14	.02	.02	.00	.00	.00	.02	10	.00	4.7	1.1	14
15	.14	.02	.02	.00	.00	.00	.02	9.8	.46	4.8	3.6	14
16	.14	.02	.02	.00	.00	.00	.02	9.3	4.9	4.8	6.5	14
17	.14	.02	.07	.00	.00	.00	.02	10	9.0	4.6	6.6	8.3
18	.14	.01	.07	.00	.00	.00	.02	10	8.6	9.0	6.9	8.1
19	.07	.02	.06	.00	.00	.00	.02	10	8.1	14	6.7	7.9
20	.07	.02	.06	.00	.00	.00	.02	10	8.2	9.4	6.3	7.8
21	.07	.02	.06	.00	.00	.00	.00	10	8.6	8.4	6.4	7.9
22	.02	.02	.05	.00	.00	.00	.00	10	8.8	8.3	6.8	7.9
23	.02	.02	.01	.00	.00	.00	.00	10	8.9	10	6.3	7.9
24	.02	.01	.02	.00	.00	.00	.00	10	9.3	15	6.0	7.9
25	.02	.01	.02	.00	.00	.00	.00	10	8.9	14	8.1	6.5
26	.02	.01	.02	.00	.00	.00	.07	10	5.8	10	16	.29
27	.02	.01	.02	.00	.00	.00	3.6	10	5.2	9.7	18	.24
28	.02	.02	.02	.00	.00	.00	8.8	10	5.5	9.6	18	.09
29	.02	.02	.00	.00	.00	.00	8.8	11	5.9	9.5	18	.02
30	.01	.02	.00	.00	---	.00	8.8	10	5.7	16	19	.02
31	.02	---	.00	.00	---	.00	---	8.8	---	17	19	---
TOTAL	47.56	.54	.80	.00	.00	.00	30.25	286.5	129.45	243.9	256.61	250.86
MEAN	1.53	.018	.026	.000	.000	.000	1.01	9.24	4.32	7.87	8.28	8.36
MAX	6.6	.02	.07	.00	.00	.00	8.8	11	9.3	17	19	18
MIN	.01	.01	.00	.00	.00	.00	.00	5.2	.00	4.6	.00	.02
AC-FT	94	1.1	1.6	.00	.00	.00	60	568	257	484	509	498

CAL YR 1979 TOTAL 2070.84 MEAN 5.67 MAX 57 MIN .00 AC-FT 4110
WTR YR 1980 TOTAL 1246.47 MEAN 3.41 MAX 19 MIN .00 AC-FT 2470

08415000 WARD COUNTY WATER IMPROVEMENT DISTRICT NO. 3 CANAL NEAR BARSTOW, TX

LOCATION.--Lat 31°34'28", long 103°30'04", Ward County, Hydrologic Unit 13070001, on left bank 96 ft (29 m) upstream from concrete culvert that crosses canal, 2 mi (3 km) downstream from headgate, and 10.5 mi (16.9 km) northwest of Barstow.

PERIOD OF RECORD.--August 1939 to May 1941, August to September 1941, December 1941 to September 1957, and March 1964 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,600 ft (792 m), from topographic map. Prior to Dec. 14, 1940, at site 1.75 mi (2.82 km) upstream at datum 2.98 ft (0.908 m) higher. Dec. 14, 1940, to May 26, 1941, at site 1.4 mi (2.3 km) upstream at datum 1.72 ft (0.524 m) higher.

REMARKS.--Records fair. Local runoff is deleted from daily discharge record. Water is diverted from the left bank of Pecos River, and is used for irrigation in the vicinity of Barstow.

AVERAGE DISCHARGE.--32 years (water years 1940, 1943-57, 1965-80), 8.94 ft^3/s (0.253 m^3/s), 6,480 acre-ft/yr (7.99 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 189 ft^3/s (5.35 m^3/s) Sept. 28, 1978; no flow at times each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	.00	.00	.00	.00	.00	.00	16	24	21	28	.14
2	.54	.00	.00	.00	.00	.00	.00	14	27	20	22	.13
3	.54	.00	.00	.00	.00	.00	.00	13	20	20	10	.11
4	.54	.00	.00	.00	.00	.00	.00	14	14	19	11	.10
5	.54	.00	.00	.00	.00	.00	.00	16	14	18	12	.10
6	.54	.00	.00	.00	.00	.00	.00	16	15	18	8.3	.07
7	.54	.00	.00	.00	.00	.00	.00	15	15	18	6.9	.07
8	.54	.00	.00	.00	.00	.00	.00	15	11	17	5.3	.07
9	.54	.00	.00	.00	.00	.00	.00	8.9	.06	17	24	.07
10	.40	.00	.00	.00	.00	.00	.05	5.9	.03	16	26	.07
11	.40	.00	.00	.00	.00	.00	38	4.2	.21	15	26	2.0
12	.40	.00	.00	.00	.00	.00	66	3.9	.12	15	24	23
13	.45	.00	.00	.00	.00	.00	26	3.9	.08	17	23	20
14	.47	.00	.00	.00	.00	.00	34	3.8	2.2	17	24	26
15	.60	.00	.00	.00	.00	.00	34	5.7	6.2	17	23	30
16	.41	.00	.00	.00	.00	.00	32	6.6	18	17	16	27
17	.34	.00	.00	.00	.00	.00	27	16	30	14	11	27
18	.18	.00	.00	.00	.00	.00	27	32	25	14	11	21
19	.15	.00	.00	.00	.00	.00	32	35	21	15	15	19
20	.11	.00	.00	.00	.00	.00	41	35	11	17	16	19
21	.08	.00	.00	.00	.00	.00	41	34	11	17	12	20
22	.08	.00	.00	.00	.00	.00	40	35	10	18	15	20
23	.04	.00	.00	.00	.00	.00	34	34	6.9	24	30	21
24	.02	.00	.00	.00	.00	.00	22	33	5.5	30	30	21
25	.01	.00	.00	.00	.00	.00	20	33	4.3	31	29	22
26	.00	.00	.00	.00	.00	.00	19	32	3.9	32	20	24
27	.02	.00	.00	.00	.00	.00	18	29	3.6	34	.57	19
28	.00	.00	.00	.00	.00	.00	16	30	6.8	33	.19	32
29	.00	.00	.00	.00	.00	.00	16	29	22	26	.16	53
30	.00	.00	.00	.00	---	.00	15	27	21	27	.14	27
31	.00	---	.00	.00	---	.00	---	25	---	28	.14	---
TOTAL	11.18	.00	.00	.00	.00	.00	598.05	620.9	348.90	642	479.70	473.93
MEAN	.36	.000	.000	.000	.000	.000	19.9	20.0	11.6	20.7	15.5	15.8
MAX	2.7	.00	.00	.00	.00	.00	66	35	30	34	30	53
MIN	.00	.00	.00	.00	.00	.00	.00	3.8	.03	14	.14	.07
AC-FT	22	.00	.00	.00	.00	.00	1190	1230	692	1270	951	940

CAL YR 1979 TOTAL 3200.07 MEAN 8.77 MAX 92 MIN .00 AC-FT 6350
WTR YR 1980 TOTAL 3174.66 MEAN 8.67 MAX 66 MIN .00 AC-FT 6300

08418000 WARD COUNTY IRRIGATION DISTRICT NO. 1 CANAL NEAR BARSTOW, TX

LOCATION.--Lat 31°32'26", long 103°29'42", Ward County, Hydrologic Unit 13070001, on left bank 0.6 mi (1.0 km) downstream from headgate and 7.9 mi (12.7 km) northwest of Barstow.

PERIOD OF RECORD.--February 1922 to September 1925 (published as "Barstow Canal near Barstow"), August 1939 to May 1941, October 1941 to September 1957, and March 1964 to current year.

GAGE.--Water-stage recorder. Concrete weir since Nov. 20, 1968. Altitude of gage is 2,600 ft (792 m) from topographic map. Prior to Aug. 15, 1939, at site about 3,000 ft (910 m) upstream at different datum.

REMARKS.--Records good. Local runoff is deleted from daily discharge record. Water is diverted from left bank of Pecos River and is used for irrigation in the vicinity of Barstow. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--36 years (water years 1923-25, 1940, 1942-57, 1965-80), 28.6 ft³/s (0.810 m³/s), 20,720 acre-ft/yr (25.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 385 ft³/s (10.9 m³/s) Aug. 30, 1923; no flow at times each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	.20	.10	.00	.00	.00	.00	25	18	43	25	18
2	19	.20	.10	.00	.00	.00	.00	28	14	38	25	20
3	27	.20	.10	.00	.00	.00	.00	18	14	39	25	22
4	36	.20	.10	.00	.00	.00	.00	9.8	14	37	44	22
5	38	.20	.00	.00	.06	.00	.00	14	17	37	52	22
6	44	.20	.00	.00	.10	.00	.00	26	22	36	41	22
7	40	.20	.00	.00	.10	.00	.00	23	18	32	31	34
8	42	.30	.00	.00	.02	.00	.00	22	13	39	33	26
9	46	.30	.00	.00	.00	.00	.00	22	6.2	43	36	6.7
10	51	.30	.00	.00	.00	.00	.00	22	4.6	43	23	.20
11	59	.30	.00	.00	.00	.15	.00	24	3.8	38	3.8	.20
12	68	.20	.00	.00	.00	.17	.10	26	3.2	38	2.2	.10
13	87	.20	.10	.00	.00	.20	.30	26	1.9	39	.54	.10
14	96	.20	.10	.00	.00	.20	.43	24	1.6	39	.20	.10
15	95	.20	.00	.00	.00	.20	9.7	24	17	39	.20	.10
16	85	.20	.00	.00	.00	.20	31	16	20	31	.20	4.7
17	65	.20	.00	.00	.06	.13	26	7.6	14	23	.20	18
18	34	.20	.00	.00	.10	.13	19	3.5	10	20	.20	16
19	20	.20	.00	.00	.10	.10	19	3.0	8.4	21	8.5	17
20	.20	.30	.00	.00	.04	.12	18	3.0	9.1	30	21	19
21	.20	.30	.00	.00	.00	.10	18	2.7	10	32	18	17
22	.20	.30	.00	.00	.00	.10	18	2.7	10	33	17	14
23	.20	.30	.00	.00	.00	.04	15	2.7	13	35	7.1	6.7
24	.20	.30	.00	.00	.00	.00	13	2.5	15	39	.10	.20
25	.20	.30	.00	.00	.00	.00	15	2.3	14	43	11	.10
26	.20	.30	.00	.00	.00	.02	23	9.2	14	39	23	.10
27	.20	.25	.00	.00	.00	.01	31	20	14	28	30	.10
28	.30	.14	.00	.00	.00	.00	27	18	17	28	29	.20
29	.27	.10	.00	.00	.00	.00	25	21	28	33	27	12
30	.20	.10	.00	.00	---	.00	24	15	37	50	26	26
31	.20	---	.00	.00	---	.00	---	13	---	36	21	---
TOTAL	975.57	6.89	.60	.00	.58	1.87	332.53	476.0	401.8	1101	581.24	344.60
MEAN	31.5	.23	.019	.000	.020	.060	11.1	15.4	13.4	35.5	18.7	11.5
MAX	96	.30	.10	.00	.10	.20	31	28	37	50	52	34
MIN	.20	.10	.00	.00	.00	.00	.00	2.3	1.6	20	.10	.10
AC-FT	1940	14	1.2	.00	1.2	3.7	660	944	797	2180	1150	684

CAL YR 1979 TOTAL 4045.64 MEAN 11.1 MAX 96 MIN .00 AC-FT 8020
WTR YR 1980 TOTAL 4222.68 MEAN 11.5 MAX 96 MIN .00 AC-FT 8380

08431700 LIMPIA CREEK ABOVE FORT DAVIS, TX
(Hydrologic bench-mark station)

LOCATION.--Lat 30°36'48", long 104°00'04", Jeff Davis County, Hydrologic Unit 13070005, on left downstream side of bridge on State Highway 118, about 1,400 ft (430 m) upstream from Jones Creek, and 6.8 mi (10.9 km) west of Fort Davis.

DRAINAGE AREA.--52.4 mi² (135.7 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 5,175.00 ft (1,577.340 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 1, 1979, at site 600 ft (183 m) upstream at datum 3.71 ft (1.131 m) higher.

REMARKS.--Water-discharge records fair. No diversion above station. Recording rain gage at station.

AVERAGE DISCHARGE.--15 years, 2.77 ft³/s (0.0784 m³/s), 0.72 in/yr (18 mm/yr), 2,010 acre-ft/yr (2.48 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,420 ft³/s (96.9 m³/s) Sept. 25, 1978, gage height, 12.63 ft (3.850 m), present datum, from rating curve extended above 150 ft³/s (4.25 m³/s) on basis of slope-area measurements of 1,130, 1,560, and 2,630 ft³/s (32.0, 44.2, and 74.5 m³/s); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1925, about 13.7 ft (4.18 m) in 1939, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 679 ft³/s (19.2 m³/s) Sept. 28 at 1100 hours, gage height, 3.85 ft (1.173 m), no peak above base of 1,000 ft³/s (28.3 m³/s); no flow most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	7.9	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.5	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.9	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	33
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	254
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	57
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	22
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	16.30	366.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.53	12.2
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	7.9	254
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
CFSM	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.23
IN.	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.26
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	32	726
(††)	.00	.00	.00	.00	.15	.00	.00	.44	.31	.71	2.46	6.53

CAL YR 1979 TOTAL 49.15 MEAN .13 MAX 5.0 MIN .00 CFSM .002 IN. .03 AC-FT 97 †† 9.97
WTR YR 1980 TOTAL 382.30 MEAN 1.04 MAX 254 MIN .00 CFSM .02 IN. .27 AC-FT 758 †† 10.60

†† Rainfall, in inches.

08431700 LIMPIA CREEK ABOVE FORT DAVIS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1965 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)
AUG 14...	0245	2.9	100	7.5	18.0	32	5	11	1.0	2.1	.2	3.5

DATE	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P)
AUG 14...	56	0	6.9	2.4	.2	14	62	62	.94	.94	.350	.24

08433000 BARRILLA DRAW NEAR SARAGOSA, TX

LOCATION.--Lat 30°57'28", long 103°27'33", Reeves County, Hydrologic Unit 13070005, on right bank at downstream side of bridge on U.S. Highway 290 (Interstate 10), 12.2 mi (19.6 km) east of Saragosa, 17.0 mi (27.4 km) east of Balmorhea, and 34.4 mi (55.3 km) west of Fort Stockton.

DRAINAGE AREA.--612 mi² (1,585 km²).

PERIOD OF RECORD.--December 1924 to July 1926, June to September 1932 (published as "Barrilla Creek"), October 1975 to current year.

REVISED RECORDS.--WSP 1312: 1925.

GAGE.--Water-stage recorder. Datum of gage is 3,078.36 ft (938.284 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1975, water-stage recorder at site 600 ft (180 m) upstream at 6.07-foot (1.850 m) higher datum.

REMARKS.--Records good. Considerable diversion for irrigation by spreader dams above station.

AVERAGE DISCHARGE.--5 years, 4.81 ft³/s (0.136 m³/s), 3,480 acre-ft/yr (4.29 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,500 ft³/s (439 m³/s) Aug. 30, 1932, gage height, 10.45 ft (3.185 m), site and datum then in use; no flow most of times.

EXTREMES FOR CURRENT YEAR.--No flow during year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

CAL YR 1979 TOTAL 84.05 MEAN .23 MAX 82 MIN .00 AC-FT 167
WTR YR 1980 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 AC-FT .00

08436500 PECOS COUNTY WATER IMPROVEMENT DISTRICT NO. 2 (UPPER DIVERSION) CANAL NEAR GRANDFALLS, TX

LOCATION.--Lat 31°18'43", long 102°55'10", Ward County, Hydrologic Unit 13070001, on left bank about 2.5 mi (4.0 km) upstream from bridge on State Highway 18, 4.6 mi (7.4 km) southwest of Grandfalls, and 12.5 mi (20.1 km) downstream from headgate of canal.

PERIOD OF RECORD.--March 1922 to July 1925 (published as "Imperial Highline Canal near Grandfalls"), August 1939 to September 1957, and March 1964 to current year.

GAGE.--Water-stage recorder. Concrete weir since Dec. 8, 1947. Altitude of gage is 2,455 ft (748 m), from topographic map. Prior to Aug. 21, 1939, water-stage recorder at site 8.5 mi (13.7 km) upstream at different datum. Aug. 21 to Oct. 3, 1939, and May 25 to Aug. 4, 1941, staff gage, and Oct. 4, 1939, to May 21, 1941, and Aug. 5, 1941, to Sept. 30, 1957, water-stage recorder at site 2.5 mi (4.0 km) downstream at different datum.

REMARKS.--Records good. Local runoff is deleted from daily discharge record. Water is diverted from right bank of Pecos River and is used for irrigation and to supply water for Imperial Reservoir. Water is released from Imperial Reservoir into Pecos County Water Improvement District No. 2 canal and into Pecos County Water Improvement District No. 3 canal for irrigation.

AVERAGE DISCHARGE.--35 years (water years 1924, 1940-57, 1965-80), 31.2 ft³/s (0.884 m³/s), 22,600 acre-ft/yr (27.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 368 ft³/s (10.4 m³/s) Sept. 18, 1923; no flow at times each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	144	1.3
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	146	.36
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	151	.00
4	.00	.00	.00	.00	.00	.00	.00	.20	.00	.00	135	.00
5	.00	.00	.00	.00	.00	.00	.00	.64	.00	.00	87	.00
6	.00	.00	.00	.00	.00	.00	.00	.07	13	.00	89	.00
7	16	.00	.00	.00	.00	.00	.00	.00	65	.00	84	.00
8	78	.00	.00	.00	.00	.00	.00	.00	80	.00	95	.00
9	111	.00	.00	.00	.00	.00	.00	.00	124	.00	167	.00
10	175	.00	.00	.00	.00	.00	.00	.00	187	.00	174	.00
11	181	.00	.00	.00	.00	.00	.00	.00	169	.00	175	.00
12	183	.00	.00	.00	.00	.00	.00	.00	133	.00	178	.00
13	185	.00	.00	.00	.00	.00	.00	.00	63	.00	183	.00
14	183	.00	.00	.00	.00	.00	.00	.00	41	.00	186	.00
15	176	.00	.00	.00	.00	.00	2.3	.00	28	.00	190	.00
16	173	.00	.00	.00	.00	.00	176	.00	.45	.00	192	.00
17	175	.00	.00	.00	.00	.00	189	.00	.00	.00	153	.00
18	180	.00	.00	.00	.00	.00	186	.00	.00	.00	9.7	.00
19	176	.00	.00	.00	.00	.00	186	.00	.00	.00	5.8	.00
20	102	.00	.00	.00	.00	.00	192	.00	.00	.00	5.3	.00
21	9.0	.00	.00	.00	.00	.00	196	.00	.00	.00	2.9	.00
22	1.6	.00	.00	.00	.00	.00	195	.00	.00	.00	1.4	.00
23	.87	.00	.00	.00	.00	.00	193	.00	.00	.00	.25	.12
24	.34	.00	.00	.00	.00	.00	194	.00	.00	26	.00	.11
25	.08	.00	.00	.00	.00	.00	189	.00	.00	114	.00	.00
26	.00	.00	.00	.00	.00	.00	128	.00	.00	118	.00	.04
27	.00	.00	.00	.00	.00	.00	60	.00	.00	119	.00	1.2
28	.00	.00	.00	.00	.00	.00	7.0	.00	.00	122	.00	8.0
29	.00	.00	.00	.00	.00	.00	.06	.00	.00	132	.00	6.9
30	.00	.00	.00	.00	---	.00	.00	.00	.00	140	.00	8.2
31	.00	---	.00	.00	---	.00	---	.00	---	144	.00	---
TOTAL	2105.89	.00	.00	.00	.00	.00	2093.36	.91	903.45	915.00	2554.35	26.23
MEAN	67.9	.000	.000	.000	.000	.000	69.8	.029	30.1	29.5	82.4	.87
MAX	185	.00	.00	.00	.00	.00	196	.64	187	144	192	8.2
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	4180	.00	.00	.00	.00	.00	4150	1.8	1790	1810	5070	52

CAL YR 1979 TOTAL 9113.32 MEAN 25.0 MAX 234 MIN .00 AC-FT 18080
WTR YR 1980 TOTAL 8599.19 MEAN 23.5 MAX 196 MIN .00 AC-FT 17060

08437500 PECOS COUNTY WATER IMPROVEMENT DISTRICT NO. 2 CANAL NEAR IMPERIAL, TX

LOCATION.--Lat 31°16'38", long 102°43'54", Pecos County, Hydrologic Unit 13070001, on left bank about 2.4 mi (3.9 km) west of Imperial and 7.7 mi (12.4 km) downstream from Imperial Reservoir.

PERIOD OF RECORD.--April 1940 to May 1941, March 1942 to September 1957, and March 1964 to current year. Records since March 1942 are equivalent to earlier records if diversions to Pecos County Water Improvement District No. 3 canal near Imperial (station 08437600) are added to flow past station.

GAGE.--Water-stage recorder. Wooden weir June 1, 1943, to Feb. 29, 1964, and concrete weir since Mar. 1, 1964. Altitude of gage is about 2,400 ft (732 m), from topographic map. Prior to July 11, 1940, at site 1.5 mi (2.4 km) upstream at different datum. July 12, 1940, to Mar. 23, 1942, at site 2.5 mi (4.0 km) upstream at datum 3.36 ft (1.024 m) higher. Mar. 24, 1942, to May 31, 1943, at site 0.5 mi (0.8 km) upstream at datum 0.70 ft (0.213 m) higher.

REMARKS.--Records good. Local runoff is deleted from daily discharge record. Water is diverted from Imperial Reservoir (on right bank of Pecos River) for irrigation in the vicinity of Imperial, and at times includes water diverted from the Pecos River through Cut Around Canal. The total flow at this station does not include 583 acre-ft (719,000 m^3) diverted from canal 75 ft (23 m) upstream, or water diverted into Pecos County Improvement District No. 3 canal (see station 08437600) 0.6 mi (1.0 km) upstream.

AVERAGE DISCHARGE.--31 years (water years 1943-57, 1965-80), 12.4 ft^3/s (0.351 m^3/s), 8,980 acre-ft/yr (11.1 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 144 ft^3/s (4.08 m^3/s) July 27, 28, 31, Aug. 1, 1945; no flow at times each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	.00	.00	.00	.00	.00	.00	19	1.4	.00	65	.00
2	34	.00	.00	.00	.00	.00	.00	17	40	.00	66	.00
3	33	.00	.00	.00	.00	.00	.24	19	42	.00	46	.00
4	32	.00	.00	.00	.00	.00	9.0	18	36	.00	21	.00
5	32	22	.00	.00	.00	.00	17	23	35	7.3	21	.00
6	33	20	.00	.00	.00	.00	16	25	38	45	22	.00
7	36	21	.00	.00	.00	.00	10	25	43	62	11	.00
8	34	20	.00	.00	.00	.00	.00	19	37	60	.00	41
9	31	18	.00	.00	.00	.00	.00	.35	3.5	46	2.4	61
10	15	18	.00	.00	.00	.00	.00	.00	.02	44	1.0	41
11	.64	18	.00	.00	.00	.00	.00	.00	.00	43	.81	1.1
12	.02	17	.00	.00	.00	.00	.00	.00	.00	43	.00	.00
13	.00	8.2	.00	.00	.00	.00	.00	.00	.00	42	.00	.00
14	.00	6.7	.00	.00	.00	.07	.00	.00	.00	37	.00	.00
15	.00	9.7	.00	.00	.00	33	.00	.00	.00	20	.00	.00
16	.00	.93	.00	.00	.00	40	.00	.00	6.2	18	.00	.00
17	.00	.01	.00	.00	.00	31	.00	.00	27	19	.00	.00
18	.00	.00	.00	.00	.00	40	.00	.00	24	22	.00	.00
19	.00	.00	.00	.00	.00	48	.00	.00	23	21	.00	.00
20	.00	.00	.00	.00	.00	43	.00	.00	21	26	.00	.00
21	.00	.00	.00	.00	.00	37	.00	.00	27	4.4	.00	.00
22	.00	.00	.00	.00	.00	29	.00	.00	38	.00	.00	.00
23	.00	.00	.00	.00	.00	29	.00	.00	37	.00	.00	.00
24	.00	.00	.00	.00	.00	30	.00	.00	29	.00	.00	.00
25	.00	.00	.00	.00	.00	35	.00	.00	18	.00	.00	.00
26	.00	.00	.00	.00	.00	41	.00	.00	22	.00	.00	1.1
27	.00	.00	.00	.00	.00	40	.00	.00	3.7	.00	.00	4.8
28	.00	.00	.00	.00	.00	28	20	.00	.00	.00	.00	3.6
29	.00	.00	.00	.00	.00	26	16	.00	.00	.00	.00	2.9
30	.00	.00	.00	.00	---	26	19	.00	.00	20	.00	2.5
31	.00	---	.00	.00	---	4.5	---	.00	---	46	.00	---
TOTAL	317.66	179.54	.00	.00	.00	560.57	107.24	165.35	551.82	625.70	256.21	159.00
MEAN	10.2	5.98	.000	.000	.000	18.1	3.57	5.33	18.4	20.2	8.26	5.30
MAX	37	22	.00	.00	.00	48	20	25	43	62	66	61
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	630	356	.00	.00	.00	1110	213	328	1090	1240	508	315

CAL YR 1979	TOTAL 3837.14	MEAN 10.5	MAX 82	MIN .00	AC-FT 7610
WTR YR 1980	TOTAL 2923.09	MEAN 7.99	MAX 66	MIN .00	AC-FT 5800

08437600 PECOS COUNTY WATER IMPROVEMENT DISTRICT NO. 3 CANAL NEAR IMPERIAL, TX

LOCATION.--Lat 31°16'51", long 102°44'26", Pecos County, Hydrologic Unit 13070001, on left bank about 220 ft (67 m) upstream from bridge on Farm Road 11, 0.3 mi (0.5 km) downstream from headgate (Pecos No. 2 canal), and 2.9 mi (4.7 km) west of Imperial.

PERIOD OF RECORD.--March 1940 to September 1941, March 1942 to September 1957, and March 1964 to current year.

GAGE.--Water-stage recorder. Concrete weir since Mar. 7, 1944. Altitude of gage is 2,390 ft (728 m), from topographic map. Prior to Jan. 10, 1941, at site 350 ft (107 m) downstream at datum 6.79 ft (2.070 m) lower. Jan. 10, 1941, to Mar. 29, 1942, at site 200 ft (61 m) downstream at datum 3.65 ft (1.113 m) lower.

REMARKS.--Records good. Local runoff is deleted from daily discharge record. Water is diverted from Imperial Reservoir (on right bank of Pecos River), 7.6 mi (12.2 km) upstream, for irrigtion in the vicinity of Imperial, and at times includes water diverted from the Pecos River by Cut Around Canal.

AVERAGE DISCHARGE.--32 years (water years 1941, 1943-57, 1965-80), 9.35 ft³/s (0.265 m³/s), 6,770 acre-ft/yr (8.35 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 175 ft³/s (4.96 m³/s) Aug. 11, 1940; no flow at times each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	.00	.00	.00	.00	.00	.00	.00	.00	20	.00	.00
2	13	.00	.00	.00	.00	.00	.75	.00	16	19	.00	.00
3	13	.00	.00	.00	.00	.00	17	.00	17	21	1.6	.00
4	13	.00	.00	.00	.00	.00	17	.00	16	26	18	.00
5	13	.00	.00	.00	.00	.00	17	.00	17	26	19	.00
6	15	.00	.00	.00	.00	.00	16	.00	17	9.9	17	.00
7	17	.00	.00	.00	.00	.00	18	.00	18	.00	.00	.00
8	18	.12	.00	.00	.00	.00	14	.00	13	.00	.00	10
9	21	.15	.00	.00	.00	.00	15	2.6	.31	.00	.00	.61
10	24	.01	.00	.00	.00	.00	17	.11	.00	.00	.00	.67
11	25	.00	.00	.00	.00	.00	14	.00	.00	.00	3.8	.05
12	8.7	.00	.00	.00	.00	.00	.20	.00	.00	.00	2.0	.00
13	3.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00
14	2.9	.00	.00	.00	.00	1.1	.00	.00	.00	3.5	.00	.00
15	2.8	.00	.00	.00	.00	22	.00	.00	.00	21	.00	.00
16	2.9	.00	.00	.00	.00	18	.00	.26	.00	20	.00	.00
17	3.0	.00	.00	.00	.00	18	.00	.08	.00	20	.00	.00
18	1.8	2.0	.00	.00	.00	5.9	.00	.00	.00	20	.00	.00
19	.61	.35	.00	.00	.00	.00	.00	.00	.00	19	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	4.2	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.12	.00	15	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	14	.70	20	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	16	.06	20	.00	.00	.00
30	.00	.00	.00	.00	---	.00	11	.00	20	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	212.71	2.63	.00	.00	.00	65.00	187.07	3.81	193.51	225.44	61.42	11.33
MEAN	6.86	.088	.000	.000	.000	2.10	6.24	.12	6.45	7.27	1.98	.38
MAX	25	2.0	.00	.00	.00	22	18	2.6	20	26	19	10
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	422	5.2	.00	.00	.00	129	371	7.6	384	447	122	22

CAL YR 1979 TOTAL 911.44 MEAN 2.50 MAX 25 MIN .00 AC-FT 1810
WTR YR 1980 TOTAL 962.92 MEAN 2.63 MAX 26 MIN .00 AC-FT 1910

08437700 WARD COUNTY WATER IMPROVEMENT DISTRICT NO. 2 CANAL NEAR GRANDFALLS, TX

LOCATION.--Lat 31°22'13", long 103°00'24", Ward County, Hydrologic Unit 13070001, on left bank 1,550 ft (477 m) upstream from Farm Road 1776, 2.3 mi (3.7 km) downstream from headgate, and 9.5 mi (15.3 km) west of Grandfalls.

PERIOD OF RECORD.--August 1939 to September 1941, November 1941 to September 1957, and March 1964 to current year.

GAGE.--Water-stage recorder. Concrete weir since Feb. 17, 1947. Altitude of gage is 2,460 ft (750 m), from topographic map. Prior to Jan. 10, 1941, at site 1.75 mi (2.82 km) downstream at different datum. Jan 11, 1941, to Feb. 16, 1947, at site 50 ft (15 m) downstream at present datum.

REMARKS.--Records good. Local runoff is deleted from the discharge record. Water is diverted from the left bank of the Pecos River for irrigation in the vicinity of Grandfalls. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--32 years (water years 1940, 1943-57, 1965-80), 19.5 ft^3/s (0.552 m^3/s), 14,130 acre-ft/yr (17.4 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 198 ft^3/s (5.61 m^3/s) Apr. 9, 1947; no flow at times each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	28	.00	.14	.00	.00	.00	.00	4.4	1.5	4.8	19
2	33	27	.00	.12	.00	.00	.00	.00	4.3	1.6	4.9	19
3	42	26	.00	.09	.00	.00	.00	.00	4.4	1.7	5.0	20
4	50	28	.00	.09	.00	.00	.00	.00	5.9	1.7	7.8	20
5	50	36	.00	.05	.00	.00	.00	.00	16	1.7	60	22
6	80	30	.00	.00	.00	.00	.00	.00	46	1.7	60	24
7	100	29	.00	.00	.00	.00	.00	.00	42	2.4	63	24
8	92	22	.00	.00	.00	.00	.00	.00	43	2.7	58	24
9	85	.82	.00	.00	.00	.00	.00	.00	52	3.1	16	22
10	19	.41	.04	.00	.00	.00	.00	.00	29	3.5	4.5	22
11	8.5	.32	.04	.00	.00	.00	.00	.00	9.1	3.8	2.4	23
12	9.1	.24	.09	.00	.00	.00	.00	.00	7.9	8.7	3.0	25
13	9.1	.20	.19	.00	.00	.00	.00	.00	5.1	5.6	3.5	36
14	9.1	.17	.12	.00	.00	.00	.00	.00	2.2	4.9	3.4	70
15	8.5	.14	.09	.00	.00	.00	.00	.00	.86	5.8	3.0	63
16	6.3	.14	.09	.00	.00	.00	.00	.00	2.8	6.3	2.6	53
17	4.8	.14	.09	.00	.00	.00	.00	.00	3.7	6.4	2.1	48
18	6.8	.14	.09	.00	.00	.00	.00	.00	3.6	6.4	2.3	44
19	8.5	.14	.10	.00	.00	.00	.00	.00	3.6	6.7	1.9	41
20	8.5	.14	.09	.00	.00	.00	.00	.00	3.9	11	1.6	37
21	39	.09	.09	.00	.00	.00	.00	.00	2.1	13	1.9	32
22	54	.07	.09	.00	.00	.00	.00	.00	2.3	20	2.2	30
23	53	.04	.13	.00	.00	.00	.00	.00	2.3	38	2.5	41
24	50	.04	.09	.00	.00	.00	.00	.00	2.3	39	2.5	61
25	46	.04	.07	.00	.00	.00	.00	.00	2.4	11	2.4	39
26	42	.04	.04	.00	.00	.00	.00	8.7	2.2	3.9	3.4	39
27	39	.04	.04	.00	.00	.00	.00	19	2.3	3.9	4.9	109
28	36	.03	.05	.00	.00	.00	.00	22	2.4	4.3	6.7	113
29	34	.00	.06	.00	.00	.00	.00	18	2.3	4.7	9.1	112
30	32	.00	.09	.00	---	.00	.00	9.4	1.7	5.0	11	112
31	30	---	.11	.00	---	.00	---	5.6	---	4.8	15	---
TOTAL	1119.2	229.39	1.89	.49	.00	.00	.00	82.70	312.06	234.8	371.4	1362
MEAN	36.1	7.65	.061	.016	.000	.000	.000	2.67	10.4	7.57	12.0	45.4
MAX	100	36	.19	.14	.00	.00	.00	22	52	39	63	113
MIN	4.8	.00	.00	.00	.00	.00	.00	.00	.86	1.5	1.6	19
AC-FT	2220	455	3.7	1.0	.00	.00	.00	164	619	466	737	2700

CAL YR 1979 TOTAL 4529.34 MEAN 12.4 MAX 100 MIN .00 AC-FT 8980
WTR YR 1980 TOTAL 3713.93 MEAN 10.1 MAX 113 MIN .00 AC-FT 7370

08446500 PECOS RIVER NEAR GIRVIN, TX

LOCATION.--Lat 31°06'47", long 102°25'02", Pecos County, Hydrologic Unit 13070008, on right bank 2.1 mi (3.4 km) upstream from Comanche Creek, 3.8 mi (6.1 km) northwest of Girvin, and 7.2 mi (11.6 km) upstream from bridge on U.S. Highway 67. Water-quality sampling site on left bank 7.2 mi (11.6 km) downstream.

DRAINAGE AREA.--29,560 mi² (76,560 km²), approximately for contributing area of supplementary gage 7.2 mi (11.6 km) downstream.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1939 to current year.

GAGE.--Water-stage recorder with concrete control and measuring flume. Datum of gage not determined. Supplementary water-stage recorder, used as regular gage prior to July 17, 1951, is now used only for peaks exceeding about 400 ft³/s (11.3 m³/s), 7.2 mi (11.6 km) downstream at datum 2,269.65 ft (691.789 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. Flow is largely regulated by Red Bluff Reservoir (station 08410000). Numerous diversions above station for irrigation.

AVERAGE DISCHARGE.--41 years, 87.9 ft³/s (2.489 m³/s), 63,680 acre-ft/yr (78.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,000 ft³/s (566 m³/s) Oct. 5, 1941, gage height, 20.49 ft (6.245 m), at supplementary gage; minimum daily, 2.2 ft³/s (0.062 m³/s) July 18, 1964.
Maximum stage since at least 1932, that of Oct. 5, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 349 ft³/s (9.88 m³/s) Sept. 11 at 1500 hours, gage height, 3.75 ft (1.143 m); minimum daily, 3.2 ft³/s (0.091 m³/s) Aug. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.9	10	30	35	34	30	23	12	8.4	11	11	15
2	6.8	10	31	35	35	28	23	11	11	10	7.5	16
3	6.6	11	31	35	36	28	22	8.3	11	9.6	4.5	15
4	6.2	9.5	31	35	36	28	22	45	10	8.5	3.9	15
5	5.9	8.9	30	34	36	28	21	38	10	8.4	3.6	13
6	6.1	10	30	34	35	28	21	22	9.7	7.5	3.6	12
7	6.0	11	30	34	34	28	21	13	8.6	7.1	3.6	12
8	7.0	11	31	34	34	28	20	12	8.4	6.5	3.2	17
9	7.6	10	30	34	34	28	20	15	12	6.6	3.6	20
10	6.8	12	30	34	34	28	20	13	27	6.1	3.6	92
11	6.2	12	29	34	34	27	20	12	83	6.3	3.9	278
12	6.5	12	31	34	34	27	19	10	118	6.0	12	124
13	10	12	35	34	34	27	19	9.2	168	5.8	36	32
14	21	12	39	33	34	27	20	9.2	175	5.3	23	17
15	17	11	38	34	34	27	20	9.6	91	5.4	25	12
16	16	28	37	34	34	26	21	8.7	41	4.9	14	10
17	14	33	36	34	33	26	20	9.4	28	4.5	12	10
18	13	32	36	34	33	26	20	12	23	4.2	12	9.8
19	11	31	36	33	33	25	27	13	17	4.2	7.2	9.5
20	10	30	34	33	33	25	67	16	15	3.8	7.0	12
21	10	30	34	34	33	25	60	18	14	3.3	6.3	10
22	11	32	34	35	33	24	43	21	11	3.4	6.1	8.9
23	10	32	34	35	33	24	31	23	12	4.2	104	8.8
24	9.8	30	35	34	32	24	21	27	37	4.0	75	35
25	9.1	29	38	34	32	24	18	30	31	4.3	50	23
26	8.6	29	39	34	32	24	17	33	21	4.3	37	38
27	8.4	29	38	33	31	24	16	26	18	3.9	29	82
28	8.0	29	37	33	31	24	15	20	16	3.9	23	78
29	7.6	28	37	33	31	24	14	15	14	3.3	20	65
30	11	30	36	34	---	23	13	16	12	3.6	17	255
31	11	---	36	34	---	23	---	12	---	3.6	16	---
TOTAL	295.1	614.4	1053	1054	972	808	714	539.4	1061.1	173.5	583.6	1345.0
MEAN	9.52	20.5	34.0	34.0	33.5	26.1	23.8	17.4	35.4	5.60	18.8	44.8
MAX	21	33	39	35	36	30	67	45	175	11	104	278
MIN	5.9	8.9	29	33	31	23	13	8.3	8.4	3.3	3.2	8.8
AC-FT	585	1220	2090	2090	1930	1600	1420	1070	2100	344	1160	2670

CAL YR 1979 TOTAL 8773.2 MEAN 24.0 MAX 65 MIN 4.0 AC-FT 17400
WTR YR 1980 TOTAL 9213.1 MEAN 25.2 MAX 278 MIN 3.2 AC-FT 18270

08446500 PECOS RIVER NEAR GIRVIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1939 to June 1941, October 1946 to September 1947, October 1953 to current year. Pesticide analyses: October 1968 to September 1974.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1939 to June 1941, October 1946 to September 1947, October 1953 to current year.
WATER TEMPERATURES: October 1953 to January 1959, March 1964 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equation developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 38,900 micromhos Aug. 6, 1965; minimum daily, 790 micromhos Apr. 26, 1957.
WATER TEMPERATURES (1953-59, 1964-68, 1970-80): Maximum daily, 35.0°C July 26, Aug. 18, 27, 1978; minimum daily, 3.0°C Feb. 3, 4, 1956, Jan. 9, 1979.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 26,200 micromhos Apr. 26; minimum daily, 5,400 micromhos Sept. 15.
WATER TEMPERATURES: Maximum daily, 34.0°C July 25, 28, 29; minimum daily, 6.0°C Jan. 26.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
OCT 25...	1335	12	21900	8.2	17.0	4500	4500	900	550	4000
DEC 04...	1310	30	18000	--	9.0	3200	3200	730	340	3200
JAN 14...	1215	35	20600	--	13.0	2900	2800	620	330	3600
FEB 29...	1245	31	21400	8.0	18.0	4100	3900	820	490	3700
MAR 31...	1745	23	23400	--	21.0	4300	4200	870	520	4100
APR 30...	0930	13	26000	--	16.0	4700	4600	930	570	4800
MAY 29...	1100	12	14000	--	27.0	2700	2700	630	280	2300
JUL 09...	1210	3.0	21200	--	26.0	4000	3900	860	450	3800
SEP 30...	1245	255	12700	--	21.0	2500	2400	560	270	2100

DATE	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	PHOSPHORUS, TOTAL (MG/L AS P)
OCT 25...	26	65	49	0	3800	6400	1.8	--	15700	.020
DEC 04...	25	56	72	0	3100	5100	1.6	6.8	12600	.050
JAN 14...	29	49	170	0	3100	5400	1.2	2.2	13200	.050
FEB 29...	25	50	170	0	3500	6200	2.3	.3	14800	.080
MAR 31...	27	60	120	0	2500	7600	2.6	.7	15700	.060
APR 30...	31	60	62	0	3900	8200	1.9	1.6	18500	.140
MAY 29...	19	57	54	0	2400	3900	1.1	13	9610	--
JUL 09...	26	70	64	0	3700	6000	2.3	1.5	14900	--
SEP 30...	18	44	120	0	2000	3800	1.1	2.1	8940	.010

08446500 PECOS RIVER NEAR GIRVIN, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	295.1	22500	16000	12800	6600	5280	3800	3010	*
NOV.	1979	614.4	21400	15100	25100	6200	10300	3600	5940	*
DEC.	1979	1053	18100	12600	35700	5100	14600	3000	8590	*
JAN.	1980	1054	20400	14400	40900	5900	16800	3400	9730	*
FEB.	1980	972	21300	15100	39600	6200	16300	3600	9390	*
MAR.	1980	808	22500	16000	34900	6600	14400	3800	8230	*
APR.	1980	714	24700	17700	34200	7400	14200	4200	8000	*
MAY	1980	539.4	18400	12900	18800	5300	7710	3100	4500	*
JUNE	1980	1061.1	16800	11600	33300	4700	13600	2800	8040	*
JULY	1980	173.5	21500	15200	7130	6300	2940	3600	1690	*
AUG.	1980	583.6	22800	16200	25500	6700	10600	3800	6020	*
SEPT	1980	1345.0	11400	7690	27900	3100	11200	1900	6880	*
TOTAL		9213.1	**	**	336000	**	138000	**	80000	**
WTD. AVG.		25	19200	13500	**	5500	**	3200	**	**

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22300	21400	19600	19000	20700	21700	23800	25900	13500	19800	24500	20000
2	22400	19900	18700	19400	20900	21800	23900	25900	13100	20300	25900	19600
3	21800	20800	18200	19600	21000	21800	23900	25100	13000	20500	25900	19300
4	22100	20600	18000	19800	21100	21900	23900	25400	13100	20600	24800	19000
5	23000	20900	17900	19900	21100	21900	24000	24400	13400	20900	25300	18900
6	22800	21000	18000	19900	21200	21900	24100	22100	13300	21000	25800	18500
7	23400	20800	18100	20000	21200	22000	24300	21000	13500	21000	24800	18200
8	22800	20600	18000	20000	21300	22000	24400	19000	14000	21300	24500	18000
9	23100	20800	18200	20100	21300	21900	24400	20600	14700	21200	24500	17700
10	23600	21000	18100	20200	21300	22000	24600	20800	15000	21500	25500	12500
11	23000	21200	18000	20400	21300	21800	24500	19900	15500	21500	22500	7500
12	23200	21800	17800	20500	21200	22100	24700	20500	16600	19500	23700	6850
13	23500	22100	17900	20600	21100	22200	24500	20100	17100	21600	23000	5780
14	23600	23200	18000	20700	21200	22300	24300	19800	16800	21800	22800	5460
15	23200	23500	17900	20600	21200	22300	24200	19100	17200	22000	22700	5400
16	23000	23600	17800	20700	21200	22400	24200	17400	17500	22000	22500	5750
17	22800	23700	17700	20800	21100	22500	24300	16500	17300	22200	23800	6010
18	22800	23200	17600	20900	21200	22600	24300	15900	17500	22300	22400	6900
19	22900	22900	17600	20800	21300	22600	24300	15400	17300	22400	22100	8110
20	22800	22000	17800	20700	21300	22800	24700	14900	17100	22500	21700	8950
21	22600	21300	17900	20800	21300	22700	25100	15000	17300	22300	22200	10800
22	21300	20200	17800	20700	21400	22800	24600	15200	17500	21800	22300	11800
23	22000	19700	17800	20800	21600	23000	24900	15300	17600	22300	22300	12800
24	21800	19300	18000	20900	21600	23100	25700	15200	18300	22600	22200	13900
25	22000	19500	18200	20700	21800	23000	26100	15300	18400	22800	23700	16000
26	21700	20200	18300	20500	21900	23000	26200	15200	18400	23500	23600	14000
27	21600	21000	18200	20600	22000	23300	26100	15100	19000	22900	23200	13800
28	21400	21300	18100	20700	22000	23400	26000	14200	19200	23300	22000	12200
29	21500	21500	18200	20800	22000	23500	25900	13900	19400	23600	20700	14000
30	21400	20700	18300	20800	---	23600	25900	13600	19500	22900	20800	12800
31	21400	---	18400	20700	---	23700	---	13500	---	23100	20700	---
MEAN	22500	21300	18100	20400	21300	22500	24700	18400	16400	21800	23300	12700

08446500 PECOS RIVER NEAR GIRVIN, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.0	14.0	8.0	11.0	8.0	12.0	15.0	21.0	27.0	26.0	30.0	29.0
2	22.0	18.0	10.0	14.0	8.0	11.0	23.0	24.0	28.0	29.0	30.0	28.0
3	22.0	16.0	12.0	9.0	13.0	11.0	19.0	15.0	29.0	32.0	32.0	29.0
4	17.0	16.0	13.0	9.0	10.0	15.0	15.0	18.0	25.0	31.0	27.0	28.0
5	20.0	15.0	13.0	9.0	14.0	17.0	19.0	24.0	29.0	31.0	30.0	29.0
6	22.0	13.0	11.0	8.0	13.0	18.0	17.0	23.0	27.0	30.0	29.0	---
7	25.0	15.0	12.0	8.0	11.0	15.0	20.0	27.0	30.0	25.0	26.0	29.0
8	22.0	14.0	10.0	12.0	8.0	15.0	15.0	22.0	26.0	30.0	32.0	28.0
9	19.0	16.0	13.0	9.0	8.0	18.0	22.0	25.0	26.0	25.0	32.0	27.0
10	17.0	15.0	14.0	14.0	7.0	17.0	25.0	28.0	28.0	25.0	31.0	24.0
11	20.0	16.0	17.0	10.0	9.0	17.0	20.0	26.0	29.0	31.0	24.0	23.0
12	21.0	12.0	10.0	---	12.0	15.0	12.0	23.0	29.0	32.0	25.0	28.0
13	23.0	10.0	10.0	13.0	15.0	15.0	11.0	23.0	29.0	33.0	25.0	27.0
14	24.0	12.0	9.0	14.0	15.0	16.0	18.0	22.0	29.0	32.0	25.0	27.0
15	25.0	11.0	10.0	13.0	14.0	20.0	21.0	21.0	29.0	32.0	31.0	28.0
16	24.0	14.0	8.0	15.0	10.0	17.0	24.0	15.0	29.0	32.0	32.0	29.0
17	24.0	12.0	8.0	15.0	8.0	17.0	15.0	15.0	25.0	30.0	32.0	30.0
18	25.0	18.0	9.0	16.0	14.0	15.0	24.5	24.0	30.0	28.0	31.0	30.0
19	24.0	17.0	12.0	19.0	17.0	14.0	24.5	23.0	25.0	32.0	31.0	29.0
20	21.0	19.0	15.0	12.0	20.0	11.0	24.0	16.0	28.0	31.0	31.0	25.0
21	23.0	15.0	14.0	14.0	13.0	20.0	20.0	25.0	28.0	33.0	31.0	29.0
22	21.0	14.0	14.0	9.0	16.0	16.0	25.0	28.0	31.0	28.0	30.0	27.0
23	17.0	14.0	14.0	13.0	17.0	18.0	25.0	28.0	26.0	33.0	28.0	23.0
24	21.0	13.0	11.0	8.0	17.0	17.0	24.0	27.0	28.0	30.0	30.0	24.0
25	20.0	13.0	13.0	9.0	13.0	18.0	22.0	29.0	31.0	34.0	29.0	24.0
26	18.0	13.0	11.0	6.0	13.0	15.0	19.0	24.0	32.0	25.0	29.0	24.0
27	20.0	14.0	12.0	12.0	18.0	21.0	22.0	27.0	32.0	31.0	29.0	21.0
28	23.0	11.0	12.0	12.0	19.0	22.0	23.0	27.0	30.0	34.0	29.0	20.0
29	21.0	11.0	10.0	7.0	18.0	14.0	26.0	28.0	31.0	34.0	29.0	21.0
30	16.0	10.0	12.0	13.0	---	---	16.0	28.0	32.0	26.0	30.0	21.0
31	8.0	---	12.0	7.0	---	21.0	---	26.0	---	26.0	30.0	---
MEAN	21.0	14.0	11.5	11.5	13.0	16.5	20.0	23.5	28.5	30.0	29.5	26.0

08447020 INDEPENDENCE CREEK NEAR SHEFFIELD, TX

LOCATION.--Lat 30°27'07", long 101°43'58", Terrell County, Hydrologic Unit 13070010, on left bank 0.5 mi (0.8 km) downstream from Joe Chandler Ranch Headquarters, 1.0 mi (1.6 km) upstream from mouth, 6 mi (10 km) downstream from bridge on Farm Road 1217, and 17 mi (27 km) southeast of Sheffield.

DRAINAGE AREA.--763 mi^2 (1,976 km^2).

PERIOD OF RECORD.--January 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,883 ft (574 m) National Geodetic Vertical Datum of 1929, by topographic division plane table survey.

REMARKS.--Records good. The Chandler Estate and the Roden Ranch have permits to divert 243 acre-ft (300,000 m^3) and 530 acre-ft (653,000 m^3) annually, respectively. National Weather Service rain gage and gage-height satellite telemeter at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--6 years, 31.4 ft^3/s (0.889 m^3/s), 22,750 acre-ft/yr (28.1 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 78,000 ft^3/s (2,210 m^3/s) Sept. 20, 1974, gage height, 16.74 ft (5.102 m), from rating curve extended above 130 ft^3/s (3.68 m^3/s) on basis of slope-area measurement of peak flow; minimum, 13 ft^3/s (0.37 m^3/s) July 26, 1974, and Nov. 16, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, about 22 ft (6.7 m) June 28, 1954, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 80 ft^3/s (2.27 m^3/s) Aug. 11 at 1645 hours, gage height, 2.44 ft (0.744 m), no peak above base of 700 ft^3/s (19.8 m^3/s); minimum daily, 16 ft^3/s (0.45 m^3/s) July 3, 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	23	22	22	20	21	22	20	19	18	19	22
2	24	22	22	22	20	21	22	20	19	18	18	22
3	23	22	22	22	20	21	20	22	18	16	18	21
4	23	23	22	22	20	21	22	24	19	17	19	21
5	24	23	22	22	20	21	23	21	18	17	19	20
6	23	23	21	22	20	21	22	21	18	18	20	20
7	23	23	21	22	21	22	23	25	18	18	21	20
8	25	23	23	22	22	22	22	21	18	18	21	20
9	25	23	23	22	22	22	23	19	20	18	20	20
10	24	23	24	22	22	22	22	19	20	18	20	21
11	24	23	24	22	22	23	21	19	18	17	47	21
12	23	23	23	22	22	22	21	20	19	17	44	20
13	22	23	23	22	22	21	22	19	18	16	30	21
14	23	23	23	22	21	21	22	20	18	18	27	19
15	23	23	22	22	20	21	21	23	18	18	26	21
16	23	23	22	22	20	21	21	19	18	18	24	18
17	23	23	22	22	20	21	21	19	18	18	29	18
18	24	23	22	22	20	21	21	19	17	20	25	18
19	23	23	22	22	20	21	21	20	18	19	23	18
20	23	24	22	22	20	20	21	19	18	19	23	18
21	23	23	22	22	20	21	22	19	18	19	23	18
22	24	23	22	23	20	22	21	19	18	18	23	18
23	23	23	22	22	20	22	21	18	19	19	23	19
24	24	23	22	21	20	22	20	18	18	18	23	19
25	23	22	22	21	21	22	19	18	18	17	23	24
26	23	22	22	21	21	22	19	18	17	18	23	31
27	23	22	22	20	20	23	20	18	17	20	22	34
28	23	22	22	20	21	23	20	19	17	23	22	32
29	23	22	22	20	21	23	19	19	17	20	20	30
30	22	22	22	20	---	23	20	22	18	20	21	28
31	22	---	22	20	---	23	---	20	---	19	21	---
TOTAL	722	683	689	670	598	672	634	617	544	567	737	652
MEAN	23.3	22.8	22.2	21.6	20.6	21.7	21.1	19.9	18.1	8.3	23.8	21.7
MAX	25	24	24	23	22	23	23	25	20	23	47	34
MIN	22	22	21	20	20	20	19	18	17	16	18	18
AC-FT	1430	1350	1370	1330	1190	1330	1260	1220	1080	1120	1460	1290

CAL YR 1979 TOTAL 10197 MEAN 27.9 MAX 337 MIN 19 AC-FT 20230
WTR YR 1980 TOTAL 7785 MEAN 21.3 MAX 47 MIN 16 AC-FT 15440

08447410 PECOS RIVER NEAR LANGTRY, TX
(National stream-quality accounting network)

LOCATION.--Lat 29°48'10", long 101°26'45", Val Verde County, Hydrologic Unit 13040212, at gaging station 7.4 mi (12.1 km) east of Langtry, 15.0 mi (24.1 km) upstream from confluence with the Rio Grande, and 638.2 mi (1,026.9 km) downstream from the American Dam at El Paso.

DRAINAGE AREA.--35,179 mi² (91,114 km²).

PERIOD OF RECORD.--Chemical analyses: October 1954 to current year. Chemical and biochemical analyses: October 1974 to current year.

REMARKS.--Records of specific conductance and discharge for water year 1980 are given in International Boundary and Water Commission Water Bulletins Nos. 49 and 50.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 10...	1012	148	2150	8.0	21.5	2.5	9.4	109	1.6	190	23
NOV 14...	1010	160	2200	7.5	14.0	.90	9.5	95	.9	52	21
DEC 12...	0950	182	2117	7.4	15.0	3.6	9.5	98	.8	13	29
JAN 09...	0940	185	3640	7.3	11.0	.50	10.1	95	2.1	13	22
FEB 06...	0950	182	3760	7.4	12.0	.90	11.0	107	.8	15	12
MAR 12...	1010	169	3980	7.4	20.0	1.6	10.4	121	.5	15	12
APR 09...	1005	142	4130	7.8	21.0	1.2	11.0	126	1.2	24	21
MAY 07...	0915	151	4200	7.7	25.0	2.4	10.8	140	1.8	26	18
JUN 11...	1040	115	3020	7.8	28.0	.80	10.3	136	2.0	28	22
JUL 23...	0930	97	2700	7.4	28.0	1.0	10.0	133	1.6	24	50
AUG 13...	1000	643	665	8.2	25.0	21	8.2	102	2.4	110	100
SEP 10...	1025	139	2580	7.7	--	3.0	7.8	103	--	23	21

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 10...	470	340	110	48	290	5.8	6.6	160	0	260	460
NOV 14...	470	310	100	53	270	5.4	5.7	190	0	250	430
DEC 12...	470	300	110	48	300	6.0	7.6	210	0	270	500
JAN 09...	720	540	160	79	500	8.1	3.7	220	0	450	790
FEB 06...	750	640	170	79	500	7.9	8.1	140	0	500	890
MAR 12...	800	660	180	84	570	8.8	9.4	170	0	570	990
APR 09...	820	690	180	89	550	8.4	9.5	150	0	560	1000
MAY 07...	700	590	160	73	500	8.2	9.1	150	0	470	840
JUN 11...	620	510	140	66	460	8.0	8.6	140	0	400	770
JUL 23...	520	420	110	59	390	7.5	7.5	130	0	360	660
AUG 13...	170	81	52	10	64	2.1	4.7	110	0	70	110
SEP 10...	480	370	110	50	330	6.6	8.1	150	0	290	540

08447410 PECOS RIVER NEAR LANGTRY, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 10...	.8	17	1280	1270	.98	.020	1.0	--	.030	--	2.4
NOV 14...	.7	16	1230	1230	--	--	1.5	1.6	.030	.030	.36
DEC 12...	.7	14	1400	1360	--	--	1.4	1.3	.010	.010	.81
JAN 09...	.8	14	2160	2110	--	--	1.3	1.3	.050	.050	.56
FEB 06...	.7	15	2320	2240	--	--	.82	.78	.040	.040	.44
MAR 12...	.8	11	2560	2500	--	--	.87	.85	.040	.040	.37
APR 09...	.9	12	2530	2480	--	--	.69	.49	.100	.080	.36
MAY 07...	.7	--	2220	--	--	--	.61	.62	.060	.070	.77
JUN 11...	.9	11	2020	1920	--	--	.28	.28	.120	.080	2.0
JUL 23...	.9	8.1	1780	1650	--	--	.14	.14	.040	.010	.82
AUG 13...	.2	8.3	401	382	--	--	1.8	1.8	.080	.020	1.4
SEP 10...	.8	12	1490	1410	--	--	.78	.75	.100	.050	.44

DATE	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED (MG/L AS C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 10...	--	2.4	.41	.000	.010	--	3.4	.2	35	14	39
NOV 14...	.30	.39	.33	.010	.010	13	--	--	6	2.6	48
DEC 12...	.54	.82	.55	.050	.000	3.8	--	--	9	4.4	56
JAN 09...	.42	.61	.47	.000	.010	2.3	--	--	6	3.0	89
FEB 06...	.38	.48	.42	.000	.000	--	5.1	.3	17	8.4	48
MAR 12...	.39	.41	.43	.010	.000	1.6	--	--	14	6.4	71
APR 09...	.37	.46	.45	.020	.010	3.3	--	--	14	5.4	92
MAY 07...	.47	.83	.54	.010	.010	3.1	--	--	15	6.1	82
JUN 11...	.40	2.1	.48	.010	.010	--	8.0	1.3	9	2.8	97
JUL 23...	.48	.86	.49	.010	.010	2.7	--	--	16	4.2	99
AUG 13...	1.3	1.5	1.3	.060	.020	--	12	3.6	41	71	99
SEP 10...	.41	.54	.46	.000	.020	2.3	--	--	20	7.5	96

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)
OCT 10...	1012	1	0	1	200	0	300	0	0	0	0
NOV 14...	1010	--	--	--	--	--	--	--	--	--	--
FEB 06...	0950	1	0	1	100	0	100	0	0	0	10
MAR 12...	1010	--	--	--	--	--	--	--	--	--	--
JUN 11...	1040	1	0	1	100	0	100	0	0	0	0
JUL 23...	0930	--	--	--	--	--	--	--	--	--	--
AUG 13...	1000	1	0	1	100	10	90	0	--	<1	0
SEP 10...	1025	--	--	--	--	--	--	--	--	--	--

08447410 PECOS RIVER NEAR LANGTRY, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)
OCT 10...	0	0	0	0	0	2	2	0	180	--	10
NOV 14...	--	--	--	--	--	--	--	--	--	--	--
FEB 06...	10	0	0	0	0	1	1	0	80	60	20
MAR 12...	--	--	--	--	--	--	--	--	--	--	--
JUN 11...	0	0	0	0	1	2	2	0	110	90	20
JUL 23...	--	--	--	--	--	--	--	--	--	--	--
AUG 13...	0	0	0	--	<3	5	3	2	570	540	30
SEP 10...	--	--	--	--	--	--	--	--	--	--	--

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE SUSPENDED RECOV. (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI)
OCT 10...	0	0	0	8	2	6	.2	.0	.2	--	--
NOV 14...	--	--	--	--	--	--	--	--	--	--	--
FEB 06...	1	1	0	0	0	10	.1	.0	.2	2	2
MAR 12...	--	--	--	--	--	--	--	--	--	--	--
JUN 11...	1	1	0	10	0	10	.1	.0	.2	0	0
JUL 23...	--	--	--	--	--	--	--	--	--	--	--
AUG 13...	3	1	2	30	30	4	.2	.1	.1	2	2
SEP 10...	--	--	--	--	--	--	--	--	--	--	--

DATE	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 10...	--	1	0	1	0	0	0	0	0	10
NOV 14...	--	--	--	--	0	--	--	--	--	--
FEB 06...	0	1	0	1	0	0	0	80	70	10
MAR 12...	--	--	--	--	0	--	--	--	--	--
JUN 11...	0	0	0	0	0	0	0	20	0	30
JUL 23...	--	--	--	--	3	--	--	--	--	--
AUG 13...	0	0	0	0	0	0	0	40	10	30
SEP 10...	--	--	--	--	0	--	--	--	--	--

DATE	TIME	PCB TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)
DEC 12...	0950	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 06...	0950	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
DEC 12...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 06...	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--

08447410 PECOS RIVER NEAR LANGTRY, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LENGTH OF EXPO-SURE (DAYS)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS)
DEC						
12...	28	2.60	2.68	1.58	.070	50.6
APR						
09...	28	2.68	2.83	2.35	.000	63.8

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	NOV 14,79		MAR 12,80		MAY 7,80		JUN 11,80	
TIME	1010		1010		0915		1040	
TOTAL CELLS/ML	130		380		1200		600	
DIVERSITY: DIVISION	0.8		1.4		1.4		0.6	
.CLASS	0.8		1.4		1.4		0.6	
..ORDER	1.5		1.4		1.7		0.6	
...FAMILY	1.5		2.6		2.5		1.3	
....GENUS	1.5		2.8		2.6		1.3	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...OOCYSTACEAE								
....DICTYOSPHAERIUM	--	-	--	-	27	2	--	-
...SCENEDESMACEAE								
....CRUCIGENIA	--	-	--	-	550#	47	--	-
....SCENEDESMUS	29#	22	--	-	--	-	--	-
....TETRASTRUM	--	-	20	5	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	57#	44	--	-	27	2	--	-
..PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	10	3	27	2	--	-
...CYMBELLACEAE								
....AMPHORA	--	-	--	-	41	4	90	15
....CYMBELLA	--	-	40	11	120	11	--	-
...DIATOMACEAE								
....DIATOMA	--	-	5	1	--	-	--	-
...FRAGILARIACEAE								
....FRAGILARIA	--	-	65#	17	82	7	--	-
....SYNEDRA	--	-	10	3	--	-	--	-
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	5	1	--	-	--	-
...NAVICULACEAE								
....NAVICULA	43#	33	40	11	55	5	--	-
...NITZSCHIACEAE								
....NITZSCHIA	--	-	25	7	55	5	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	140#	37	--	-	--	-
....ANACYSTIS	--	-	10	3	27	2	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	130#	21
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	150	13	390#	64
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	--	-	--	-
...PERIDINIACEAE								
....PERIDINIUM	--	-	10	3	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08447410 PECOS RIVER NEAR LANGTRY, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE TIME	JUL 23,80 0930	AUG 13,80 1000	SEP 10,80 1025
TOTAL CELLS/ML	310	1000	310
DIVERSITY: DIVISION	1.1	0.0	1.5
.CLASS	1.1	0.0	1.5
..ORDER	1.3	0.4	2.0
...FAMILY	1.3	0.4	2.3
....GENUS	1.3	0.4	2.3

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...OOCYSTACEAE						
....DICTYOSPHAERIUM	--	-	--	-	--	-
...SCENEDESMACEAE						
....CRUCIGENIA	--	-	--	-	--	-
....SCENEDESMUS	--	-	--	-	51#	17
....TETRASTRUM	--	-	--	-	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	13	4	--	-	13	4
..PENNALES						
...ACHNANTHACEAE						
....ACHNANTHES	--	-	--	-	--	-
...CYMBELLACEAE						
....AMPHORA	--	-	--	-	--	-
....CYMBELLA	--	-	--	-	--	-
...DIATOMACEAE						
....DIATOMA	--	-	--	-	--	-
...FRAGILARIACEAE						
....FRAGILARIA	--	-	--	-	51#	17
....SYNEDRA	--	-	--	-	--	-
...GOMPHONEMATACEAE						
....GOMPHONEMA	--	-	--	-	--	-
...NAVICULACEAE						
....NAVICULA	77#	25	--	-	--	-
...NITZSCHIACEAE						
....NITZSCHIA	--	-	--	-	51#	17
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....AGMENELLUM	--	-	--	-	--	-
....ANACYSTIS	--	-	77	7	26	8
..HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	210#	67	--	-	120#	38
...OSCILLATORIACEAE						
....OSCILLATORIA	--	-	950#	92	--	-
PYRRHOPHYTA (FIRE ALGAE)						
.DINOPHYCEAE						
..PERIDINIALES						
...GLENODINIACEAE						
....GLENODINIUM	13	4	--	-	--	-
...PERIDINIACEAE						
....PERIDINIUM	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08449400 DEVILS RIVER AT PAFFORD CROSSING NEAR COMSTOCK, TX

LOCATION.--Lat 29°40'35", long 101°00'00", Val Verde County, Hydrologic Unit 13040302, on left bank 10 mi (16 km) east of Comstock, and 25.5 mi (16.1 km) upstream from mouth.

DRAINAGE AREA.--3,961 mi^2 (10,259 km^2).

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1978 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: February 1978 to current year.
WATER TEMPERATURES: February 1978 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 422 micromhos Feb. 18, 1978; minimum daily, 183 micoromhos Sept. 25, 1980.
WATER TEMPERATURES: Maximum daily, 30.0°C on many days during summer months; minimum daily, 4.0 °C January 14, 1979.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 409 micromhos Dec. 4; minimum daily, 183 micromhos Sept. 25.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 09...	1240	280	390	7.7	23.0	1.2	9.8	118	1.6	25	K17
NOV 13...	1230	280	400	7.2	15.5	.60	9.4	96	.5	24	K19
DEC 11...	1150	270	389	7.3	18.0	.70	9.0	99	.6	K14	K13
JAN 08...	1110	280	435	7.0	12.0	.40	10.0	95	2.2	K14	K13
FEB 05...	1145	351	420	7.1	12.0	1.0	11.4	108	.9	K14	K14
MAR 11...	1120	247	420	7.6	19.0	1.7	11.2	124	.3	K16	21
APR 08...	1125	248	389	7.7	19.0	1.8	10.1	111	.8	K16	20
MAY 06...	1045	247	410	7.7	23.0	2.3	10.8	130	1.6	31	22
JUN 10...	1120	234	340	7.8	25.0	.60	10.6	132	2.0	34	21
JUL 22...	1130	234	340	7.3	29.0	.70	10.3	137	1.2	28	K17
AUG 12...	1110	768	370	7.0	25.0	33	10.0	130	1.8	560	600
SEP 09...	1240	220	370	7.5	27.0	3.5	9.4	120	--	84	80

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 09...	190	21	51	14	8.2	.3	1.5	200	0	14	16
NOV 13...	190	26	53	14	8.3	.3	1.5	200	0	15	17
DEC 11...	190	4	54	14	8.6	.3	1.5	230	0	11	14
JAN 08...	190	5	56	13	8.3	.3	4.2	230	0	12	16
FEB 05...	210	13	58	15	8.5	.3	1.3	240	0	11	15
MAR 11...	200	16	54	15	9.1	.3	1.2	220	0	9.7	15
APR 08...	190	18	53	15	9.0	.3	1.3	210	0	8.2	16
MAY 06...	180	33	50	14	9.9	.3	1.3	210	0	9.6	14
JUN 10...	160	13	43	13	8.3	.3	1.5	180	0	11	14
JUL 22...	170	25	43	14	8.6	.3	1.4	210	0	9.7	21
AUG 12...	170	12	49	12	7.8	.3	1.7	210	0	8.9	16
SEP 09...	170	28	44	14	8.2	.3	1.4	190	0	6.3	16

08449400 DEVILS RIVER AT PAFFORD CROSSING NEAR COMSTOCK, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 09...	.4	15	194	219	1.7	.040	1.7	--	.030	--	.59
NOV 13...	.2	13	227	231	--	--	2.3	2.3	.020	.020	.53
DEC 11...	.3	14	212	237	--	--	2.1	1.5	.010	.000	.36
JAN 08...	.3	13	211	241	--	--	2.0	1.1	.040	.040	.96
FEB 05...	.3	13	203	248	--	--	1.8	1.7	.040	.010	.42
MAR 11...	.3	12	221	232	--	--	1.6	1.6	.060	.080	.54
APR 08...	.4	12	212	224	--	--	1.4	1.3	.080	.100	.61
MAY 06...	.3	11	212	206	--	--	1.3	1.3	.040	.060	.87
JUN 10...	.3	14	191	199	--	--	1.2	1.1	.100	.080	.39
JUL 22...	.3	16	216	203	--	--	1.2	1.2	.060	.030	1.1
AUG 12...	.3	14	228	214	--	--	1.8	1.8	.080	.020	1.2
SEP 09...	.3	15	214	196	--	--	1.3	1.6	.020	.030	.33

DATE	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	CARBON, ORGANIC SUSPENDED (MG/L AS C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 09...	--	.62	.37	.000	.000	--	2.7	.2	11	8.3	97
NOV 13...	.20	.55	.22	.000	.000	16	--	--	6	4.5	90
DEC 11...	.35	.37	.35	.000	.000	4.1	--	--	8	5.8	100
JAN 08...	.78	1.0	.82	.010	.010	2.6	--	--	8	6.0	100
FEB 05...	.28	.46	.29	.000	.000	--	2.1	.9	19	18	67
MAR 11...	.33	.60	.41	.010	.010	1.8	--	--	26	17	92
APR 08...	.30	.69	.40	.020	.000	4.6	--	--	15	10	98
MAY 06...	.71	.91	.77	.010	.010	--	--	--	17	11	99
JUN 10...	.34	.49	.42	.030	.000	--	9.0	1.8	17	11	99
JUL 22...	.56	1.2	.59	.010	.010	7.0	--	--	11	6.9	100
AUG 12...	1.1	1.3	1.1	.040	.030	--	3.2	1.3	55	114	94
SEP 09...	.51	.35	.54	.000	.010	2.4	--	--	14	8.3	98

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUSPENDED TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)
OCT 09...	1240	1	0	1	300	200	100	1	0	<1	0
NOV 13...	1230	--	--	--	--	--	--	--	--	--	--
FEB 05...	1145	1	0	1	100	0	100	0	0	<1	0
MAR 11...	1120	--	--	--	--	--	--	--	--	--	--
JUN 10...	1120	1	0	1	200	0	300	0	--	<1	0
JUL 22...	1130	--	--	--	--	--	--	--	--	--	--
AUG 12...	1110	1	0	2	300	100	200	0	0	1	10
SEP 09...	1240	--	--	--	--	--	--	--	--	--	--

08449400 DEVILS RIVER AT PAFFORD CROSSING NEAR COMSTOCK, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)
OCT 09...	0	0	0	0	<3	0	0	0	20	--	<10
NOV 13...	--	--	--	--	--	--	--	--	--	--	--
FEB 05...	0	0	0	0	<3	1	1	0	50	40	<10
MAR 11...	--	--	--	--	--	--	--	--	--	--	--
JUN 10...	0	0	0	--	<3	2	1	1	50	--	<10
JUL 22...	--	--	--	--	--	--	--	--	--	--	--
AUG 12...	10	0	0	--	<3	4	4	0	100	--	<10
SEP 09...	--	--	--	--	--	--	--	--	--	--	--

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI)
OCT 09...	2	2	0	0	0	<1	.4	.3	.1	--	--
NOV 13...	--	--	--	--	--	--	--	--	--	--	--
FEB 05...	2	2	0	20	20	<1	.1	.0	.1	1	1
MAR 11...	--	--	--	--	--	--	--	--	--	--	--
JUN 10...	0	0	0	10	--	<1	.1	.0	.2	0	0
JUL 22...	--	--	--	--	--	--	--	--	--	--	--
AUG 12...	3	0	4	10	8	2	.2	.1	.1	0	0
SEP 09...	--	--	--	--	--	--	--	--	--	--	--

DATE	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 09...	--	0	0	0	0	0	0	0	0	<3
NOV 13...	--	--	--	--	0	--	--	--	--	--
FEB 05...	0	0	0	0	0	0	0	30	20	6
MAR 11...	--	--	--	--	0	--	--	--	--	--
JUN 10...	0	0	0	0	1	1	0	40	0	40
JUL 22...	--	--	--	--	0	--	--	--	--	--
AUG 12...	0	0	0	0	0	0	0	50	20	30
SEP 09...	--	--	--	--	0	--	--	--	--	--

DATE	LENGTH OF EXPOSURE (DAYS)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2)	CHLOR-B PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2)	BIOMASS CHLOROPHYLL RATIO PERIPHYTON (UNITS)
DEC 11...	26	14.0	14.2	.660	.060	303
APR 08...	28	12.7	13.0	.540	.000	556
AUG 12...	21	2.36	2.52	.080	.000	2000

08449400 DEVILS RIVER AT PAFFORD CROSSING NEAR COMSTOCK, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE TIME	MAR 11,80 1120		MAY 6,80 1045		JUN 10,80 1120		JUL 22,80 1130		AUG 12,80 1110		SEP 9,80 1240	
TOTAL CELLS/ML	2500		3200		1600		2200		4500		3000	
DIVERSITY: DIVISION	1.1		1.2		0.3		0.3		0.6		0.5	
.CLASS	1.2		1.2		0.3		0.3		0.6		0.5	
..ORDER	1.4		1.6		0.8		0.4		0.9		0.6	
...FAMILY	1.7		2.1		0.8		0.9		1.5		0.7	
....GENUS	1.7		2.2		0.8		0.9		1.5		0.7	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...OOCYSTACEAE												
....ANKISTRODESMUS	14	1	*	0	--	-	--	-	--	-	26	1
....DICTYOSPHAERIUM	--	-	28	1	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	*	0	--	-	--	-	--	-	100	3
....TETRAEDRON	--	-	--	-	13	1	26	1	39	1	--	-
....TREUBARIA	--	-	--	-	--	-	13	1	--	-	--	-
...SCENEDESMACEAE												
....SCENEDESMUS	190	8	83	3	--	-	--	-	130	3	52	2
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	-	28	1	--	-	--	-	39	1	*	0
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	41	2	28	1	--	-	--	-	*	0	*	0
....MELOSIRA	110	4	83	3	--	-	--	-	77	2	--	-
..PENNALES												
...CYMBELLACEAE												
....CYMBELLA	27	1	120	4	26	2	--	-	26	1	--	-
...DIATOMACEAE												
....DIATOMA	--	-	*	0	--	-	--	-	--	-	--	-
...EUNOTIACEAE												
....EUNOTIA	14	1	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....FRAGILARIA	--	-	170	5	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	*	0	--	-	13	1	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	27	1	*	0	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....NAVICULA	69	3	120	4	26	2	--	-	64	1	--	-
...NITZSCHIACEAE												
....NITZSCHIA	160	7	120	4	--	-	--	-	--	-	52	2
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	--	-	26	1	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...OCHROMONADACEAE												
....OCHROMONAS	41	2	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	83	3	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	*	0	13	1	--	-	*	0	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	51	2	210	5	--	-
....ANACYSTIS	27	1	180	6	140	9	--	-	39	1	39	1
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	1400#	87	1900#	86	3400#	75	2700#	90
...OSCILLATORIACEAE												
....OSCILLATORIA	1700#	70	2100#	65	--	-	--	-	460	10	--	-
....PHORMIDIUM	--	-	--	-	--	-	220	10	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	26	1	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08449400 DEVILS RIVER AT PAFFORD CROSSING NEAR COMSTOCK, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	8635	366	211	4920	15	342	10	236	180
NOV.	1979	8409	381	216	4910	15	344	10	235	180
DEC.	1979	8529	396	221	5100	16	360	11	243	190
JAN.	1980	8254	391	220	4900	15	345	10	234	180
FEB.	1980	7517	377	215	4370	15	305	10	209	180
MAR.	1980	7827	373	214	4520	15	315	10	216	180
APR.	1980	7099	365	211	4040	15	281	10	194	180
MAY	1980	7463	347	204	4110	14	283	9.8	198	170
JUNE	1980	6885	338	200	3730	14	256	9.7	180	170
JULY	1980	6624	339	201	3590	14	247	9.7	173	170
AUG.	1980	7648	347	204	4200	14	290	9.8	202	170
SEPT	1980	35359	221	143	13700	9.5	902	7.0	670	120
TOTAL		120249	**	**	62100	**	4270	**	2990	**
WTD. AVG.		329	324	191	**	13	**	9.2	**	160

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	355	368	393	399	380	372	366	365	338	330	333	353
2	352	370	401	366	362	355	364	354	331	317	330	359
3	366	373	405	374	387	368	362	346	333	327	332	363
4	332	381	409	377	370	378	365	345	332	331	330	352
5	366	352	387	379	361	357	350	340	331	336	331	340
6	376	385	398	382	396	366	360	337	331	333	329	335
7	370	386	397	380	370	374	369	334	334	331	334	331
8	369	386	395	384	380	388	373	343	336	328	337	328
9	369	389	394	385	374	364	368	357	338	326	339	342
10	373	377	393	388	366	384	367	350	333	346	341	340
11	376	392	388	390	353	387	373	342	337	340	342	336
12	348	388	383	393	367	386	360	331	343	337	364	337
13	380	389	390	397	372	375	363	347	347	335	367	344
14	376	369	396	399	380	380	366	343	343	333	365	334
15	367	388	392	394	383	360	378	339	339	331	366	340
16	362	383	395	396	347	368	379	337	336	336	363	349
17	357	402	397	397	364	377	369	358	338	338	360	351
18	351	384	398	393	381	356	360	355	342	340	358	355
19	367	388	402	388	397	372	377	350	337	339	346	347
20	356	367	393	386	394	378	370	348	334	341	343	343
21	366	379	398	391	389	380	362	347	335	343	340	346
22	383	385	394	389	386	377	360	344	334	334	342	347
23	366	356	399	395	390	370	365	353	333	351	341	348
24	375	365	394	401	392	372	366	352	340	343	340	350
25	381	377	398	394	380	377	353	353	350	344	339	183
26	366	393	400	400	375	374	357	352	357	345	342	250
27	377	380	395	398	371	373	360	352	349	348	344	265
28	380	387	391	396	389	376	362	356	341	350	346	289
29	367	393	393	399	390	379	359	347	343	352	348	335
30	366	398	395	405	---	377	373	348	342	366	349	358
31	366	---	401	400	---	372	---	346	---	345	351	---
MEAN	366	381	396	391	377	373	365	347	339	339	345	332

08450900 RIO GRANDE BELOW AMISTAD DAM NEAR DEL RIO, TX

LOCATION.--Lat 29°25'30", long 101°27'00", Val Verde County, Hydrologic Unit 13080001, 2.2 mi (3.5 km) downstream from Amistad Dam and 10 mi (16 km) northwest of Del Rio.

DRAINAGE AREA.--123,143 mi^2 (318,940 km^2).

PERIOD OF RECORD.--Chemical analyses: July 1968 to current year.

REMARKS.--The flow is controlled largely by releases from Amistad Reservoir. Records of daily mean discharge for water year 1980 are given in International Boundary and Water Commission Water Bulletins Nos. 49 and 50.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT 17...	0725	1060	1000	8.2	23.0	250	140	72	17
NOV 21...	0815	738	1030	7.7	15.5	250	130	75	16
DEC 19...	0820	2320	1020	7.9	12.0	250	130	73	17
JAN 16...	0820	2320	1010	8.0	12.0	270	140	77	18
FEB 20...	0815	2370	1020	7.9	10.5	280	150	79	19
MAR 19...	0825	3200	1020	8.1	12.0	260	130	76	18
APR 16...	0823	1240	1030	8.0	15.5	260	130	76	18
MAY 27...	1119	3990	1040	8.2	23.0	270	140	77	19
JUN 18...	0720	3990	1050	7.6	25.0	270	150	76	20
JUL 16...	0725	7840	1080	8.2	26.0	270	150	76	20
AUG 20...	0720	2070	1050	8.0	27.0	260	150	73	19
SEP 17...	0720	57	996	7.8	25.5	250	130	69	18

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 17...	110	3.0	5.8	140	0	230	100	17	621
NOV 21...	110	3.0	5.5	150	0	230	110	17	637
DEC 19...	110	3.0	5.2	150	0	220	100	17	616
JAN 16...	110	2.9	5.1	150	0	240	110	17	651
FEB 20...	100	2.6	5.8	150	0	230	110	16	634
MAR 19...	110	2.9	5.1	160	0	220	100	16	624
APR 16...	110	2.9	5.4	160	0	230	100	17	635
MAY 27...	110	2.9	5.3	160	0	220	110	17	637
JUN 18...	120	3.2	5.3	150	0	230	110	17	652
JUL 16...	120	3.2	5.8	150	0	240	120	17	673
AUG 20...	120	3.2	5.9	140	0	240	120	17	664
SEP 17...	110	3.1	5.4	140	0	220	110	17	618

08459000 RIO GRANDE AT LAREDO, TX
(National stream-quality accounting network)

LOCATION.--Lat 27°29'45", long 99°29'30", Webb County, Hydrologic Unit 13080002, at gaging station 1.1 mi (1.8 km) downstream from the highway bridge between Laredo and Nuevo Laredo, Tamaulipas, Mex., and 891.0 mi (1.433.6 km) downstream from the American Dam at El Paso.

DRAINAGE AREA.--132,578 mi^2 (343,377 km^2), United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECORD.--Chemical analyses: July 1955 to current year. Chemical, biochemical, and sediment analyses: January 1973 to current year.

PERIOD OF DAILY RECORED.--
SPECIFIC CONDUCTANCE: October 1974 to current year.
WATER TEMPERATURES: October 1974 to curent year.

REMARKS.--Records of discharge for water year 1979 are given in International Boundary and Water Commission Water Bulletins Nos. 49 and 50. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,690 micromhos June 1, 1963; minimum daily, 214 micromhos Sept. 26, 1964.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,170 micromhos Apr. 25; minimum daily, 338 micromhos Aug. 13.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 16...	0957	1300	977	8.3	25.0	21	7.6	93	1.6	11000	4100
NOV 15...	1352	900	1000	8.3	16.5	10	9.4	96	.7	22000	8100
DEC 19...	1608	2650	1000	8.5	10.5	73	12.0	107	.4	K170	K130
JAN 23...	1637	2730	933	8.3	14.0	22	10.1	97	.5	860	170
FEB 21...	1438	2550	1010	8.3	17.5	19	10.1	106	.9	740	170
MAR 27...	1003	5300	1030	8.2	18.0	40	8.4	90	1.3	480	330
APR 21...	1700	900	1110	8.3	23.5	21	8.5	100	1.8	K61000	14000
MAY 27...	0910	6700	1010	8.2	27.5	160	7.0	89	1.9	2300	220
JUN 25...	0800	3300	1100	8.2	29.0	27	4.1	54	2.8	400	100
JUL 24...	0942	3600	1100	8.3	29.0	26	6.6	87	2.2	260	200
AUG 19...	0953	4190	829	8.2	28.0	55	7.2	92	.4	1200	K240
SEP 15...	1644	2140	932	8.0	29.5	47	7.5	99	1.4	1600	K480

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 16...	290	160	82	20	99	2.5	4.6	160	0	240	93
NOV 15...	270	130	79	18	100	2.6	4.0	170	0	220	98
DEC 19...	280	150	83	18	100	2.6	4.8	160	2	220	100
JAN 23...	260	120	77	17	96	2.6	4.6	170	0	210	93
FEB 21...	300	170	85	21	110	2.8	5.1	160	0	230	100
MAR 27...	290	160	83	20	110	2.8	5.0	160	0	240	110
APR 21...	290	170	83	20	120	3.1	5.2	150	0	260	120
MAY 27...	260	130	76	18	110	2.9	5.0	160	0	220	100
JUN 25...	260	150	72	20	120	3.2	5.2	140	0	230	120
JUL 24...	260	150	74	19	120	3.2	5.5	150	0	250	120
AUG 19...	260	120	80	14	73	2.0	4.7	170	0	160	80
SEP 15...	250	130	71	17	92	2.5	4.5	150	0	200	100

08459000 RIO GRANDE AT LAREDO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)
OCT 16...	.8	16	592	636	.43	.46	.050	--	.80	--
NOV 15...	.8	15	653	621	.36	.47	.110	.140	3.8	9.5
DEC 19...	.8	16	637	625	.60	.29	.000	.000	.91	.45
JAN 23...	.8	15	629	600	.53	.50	.010	.010	.46	.43
FEB 21...	.7	15	638	646	.27	.27	.040	.030	.00	.00
MAR 27...	.8	15	664	665	.54	.52	.020	.000	.81	.51
APR 21...	.9	14	720	697	.08	.06	.060	.020	.61	.59
MAY 27...	.8	16	647	626	.47	.47	.040	.030	2.9	2.1
JUN 25...	1.1	17	688	655	.16	.16	.010	.030	1.1	.56
JUL 24...	1.0	17	691	673	.23	.11	.000	.000	.90	.50
AUG 19...	.6	10	435	514	1.8	1.7	.000	.000	1.2	.71
SEP 15...	.8	14	593	573	.42	.43	.000	.000	1.2	.87

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	CARBON, ORGANIC SUSPENDED (MG/L AS C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 16...	.85	--	.030	.000	--	7.6	--	58	204	99
NOV 15...	3.9	9.6	.040	.010	6.9	--	--	18	44	99
DEC 19...	.91	.45	.010	.000	6.2	--	--	41	293	98
JAN 23...	.47	.44	.040	.020	--	3.5	.6	54	398	96
FEB 21...	.00	.03	.030	.000	7.5	--	--	33	227	98
MAR 27...	.83	.51	.040	.020	6.2	--	--	131	1880	82
APR 21...	.67	.61	.040	.010	--	5.5	.6	34	83	98
MAY 27...	2.9	2.1	.140	.010	8.4	--	--	316	5720	95
JUN 25...	1.1	.59	.190	.010	5.6	--	--	78	695	97
JUL 24...	.90	.50	.070	.010	--	7.0	--	75	729	95
AUG 19...	1.2	.71	.100	.010	6.8	--	--	139	1570	88
SEP 15...	1.2	.87	.060	.020	7.2	--	--	69	399	97

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUSPENDED TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)
OCT 16...	0957	4	1	3	200	100	90	0	0	<1	0
DEC 19...	1608	--	--	--	--	--	--	--	--	--	--
JAN 23...	1637	2	0	2	0	0	90	0	0	0	0
MAR 27...	1003	--	--	--	--	--	--	--	--	--	--
APR 21...	1700	3	1	2	100	0	100	1	--	<1	0
JUN 25...	0800	--	--	--	--	--	--	--	--	--	--
JUL 24...	0942	3	0	3	200	100	100	0	--	<1	50
SEP 15...	1644	--	--	--	--	--	--	--	--	--	--

08459000 RIO GRANDE AT LAREDO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER TOTAL RECOVERABLE (UG/L AS CU)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)
OCT 16...	0	0	0	0	<3	0	0	0	940	930	<10
DEC 19...	--	--	--	--	--	--	--	--	--	--	--
JAN 23...	0	0	2	2	0	9	9	0	440	430	<10
MAR 27...	--	--	--	--	--	--	--	--	--	--	--
APR 21...	0	0	0	--	<3	0	0	2	560	--	<10
JUN 25...	--	--	--	--	--	--	--	--	--	--	--
JUL 24...	50	0	0	--	<3	11	11	0	1000	980	20
SEP 15...	--	--	--	--	--	--	--	--	--	--	--

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI)
OCT 16...	4	4	0	40	40	1	.1	.1	.0	6	6
DEC 19...	--	--	--	--	--	--	--	--	--	--	--
JAN 23...	8	8	0	20	20	2	.2	.0	.3	2	2
MAR 27...	--	--	--	--	--	--	--	--	--	--	--
APR 21...	10	8	2	20	20	3	.3	.2	.1	1	0
JUN 25...	--	--	--	--	--	--	--	--	--	--	--
JUL 24...	10	10	0	40	--	<1	.3	.0	.3	4	4
SEP 15...	--	--	--	--	--	--	--	--	--	--	--

DATE	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 16...	0	1	0	1	0	0	0	10	6	4
DEC 19...	--	--	--	--	0	--	--	--	--	--
JAN 23...	0	1	0	1	0	0	0	30	30	<3
MAR 27...	--	--	--	--	0	--	--	--	--	--
APR 21...	1	1	0	1	0	0	0	20	--	<3
JUN 25...	--	--	--	--	0	--	--	--	--	--
JUL 24...	0	1	0	1	0	0	0	30	30	4
SEP 15...	--	--	--	--	0	--	--	--	--	--

DATE	LENGTH OF EXPOSURE (DAYS)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2)	CHLOR-B PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2)	BIOMASS CHLOROPHYLL RATIO PERIPHYTON (UNITS)
DEC 11...	26	14.0	14.2	.660	.060	303
JAN 23...	48	2.68	2.91	2.17	.540	106
MAY 27...	36	14.3	19.1	24.6	9.24	195
JUL 24...	30	1.81	2.05	1.56	.030	154
AUG 19...	26	.630	.787	1.17	.370	134
SEP 15...	27	10.3	12.6	7.95	1.48	289

08459000 RIO GRANDE AT LAREDO, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE TIME	NOV 15,79 1352	MAR 27,80 1003	MAY 27,80 0910	JUN 25,80 0800
TOTAL CELLS/ML	530	690	1700	2000
DIVERSITY: DIVISION	1.2	1.1	0.9	0.9
.CLASS	1.2	1.1	0.9	0.9
..ORDER	1.4	1.3	1.7	1.1
...FAMILY	1.4	2.8	2.2	1.6
....GENUS	1.9	2.9	2.2	1.6

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	--	-
...COELASTRACEAE								
....COELASTRUM	--	-	--	-	--	-	--	-
...HYDRODICTYACEAE								
....PEDIASTRUM	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	--	-	10	1	--	-	--	-
....CHODATELLA	14	3	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	160	8
....OOCYSTIS	--	-	--	-	--	-	--	-
....POLYEDRIOPSIS	--	-	--	-	13	1	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	--	-	--	-
....SCENEDESMUS	--	-	55	8	520#	30	1300#	66
....TETRASTRUM	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	57	11	--	-	26	2	13	1
..ZYGNEMATALES								
...DESMIDIACEAE								
....COSMARIUM	--	-	5	1	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	--	-	10	1	470#	27	120	6
....MELOSIRA	14	3	--	-	--	-	--	-
..PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	25	4	--	-	--	-
....COCCONEIS	--	-	40	6	--	-	--	-
...CYMBELLACEAE								
....CYMBELLA	--	-	5	1	--	-	--	-
...FRAGILARIACEAE								
....FRAGILARIA	--	-	130#	18	260#	15	91	5
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	5	1	--	-	--	-
...NAVICULACEAE								
....NAVICULA	--	-	65	9	26	2	--	-
...NITZSCHIACEAE								
....NITZSCHIA	72	14	220#	31	410#	24	280	14
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	--	-	--	-
....ANACYSTIS	--	-	--	-	--	-	13	1
....COCCOCHLORIS	--	-	--	-	--	-	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	95	14	--	-	--	-
...OSCILLATORIACEAE								
....LYNGBYA	290#	54	--	-	--	-	--	-
....OSCILLATORIA	86#	16	--	-	--	-	--	-
....SCHIZOTHRIX	--	-	35	5	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08459000 RIO GRANDE AT LAREDO, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	JUL 24,80		AUG 19,80		SEP 15,80	
TIME	0942		0953		1644	
TOTAL CELLS/ML	2500		2000		2100	
DIVERSITY: DIVISION	1.6		1.3		1.5	
.CLASS	1.6		1.3		1.5	
..ORDER	2.0		1.7		1.7	
...FAMILY	2.3		2.3		2.4	
....GENUS	2.6		3.0		2.7	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHARACIACEAE						
....SCHROEDERIA	--	-	--	-	13	1
...COELASTRACEAE						
....COELASTRUM	--	-	--	-	280	13
...HYDRODICTYACEAE						
....PEDIASTRUM	--	-	290	14	39	2
...OOCYSTACEAE						
....ANKISTRODESMUS	13	1	39	2	--	-
....CHODATELLA	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-
....OOCYSTIS	26	1	--	-	--	-
....POLYEDRIOPSIS	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	13	1
....TREUBARIA	--	-	--	-	13	1
...SCENEDESMACEAE						
....ACTINASTRUM	--	-	410#	21	--	-
....SCENEDESMUS	1100#	44	440#	22	580#	28
....TETRASTRUM	--	-	52	3	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	39	2	91	5	52	2
..ZYGNEMATALES						
...DESMIDIACEAE						
....COSMARIUM	--	-	--	-	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	39	2	180	9	13	1
....MELOSIRA	--	-	26	1	--	-
..PENNALES						
...ACHNANTHACEAE						
....ACHNANTHES	--	-	--	-	--	-
....COCCONEIS	--	-	--	-	--	-
...CYMBELLACEAE						
....CYMBELLA	--	-	--	-	--	-
...FRAGILARIACEAE						
....FRAGILARIA	170	7	--	-	--	-
...GOMPHONEMATACEAE						
....GOMPHONEMA	--	-	--	-	--	-
...NAVICULACEAE						
....NAVICULA	--	-	--	-	26	1
...NITZSCHIACEAE						
....NITZSCHIA	190	8	170	8	280	13
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOMONADACEAE						
....CRYPTOMONAS	13	1	13	1	13	1
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....AGMENELLUM	410#	17	--	-	210	10
....ANACYSTIS	230	9	230	12	550#	26
....COCCOCHLORIS	--	-	52	3	--	-
..HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	--	-	--	-	--	-
...OSCILLATORIACEAE						
....LYNGBYA	--	-	--	-	--	-
....OSCILLATORIA	230	9	--	-	--	-
....SCHIZOTHRIX	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	13	1	--	-	13	1
....TRACHELOMONAS	13	1	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08459000 RIO GRANDE AT LAREDO, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	28329	1000	616	47100	110	8310	210	15700	270
NOV.	1979	27644	1010	620	46200	110	8180	210	15500	270
DEC.	1979	68634	1010	622	115000	110	20500	210	38600	270
JAN.	1980	80830	1020	627	137000	110	24400	210	45900	280
FEB.	1980	74580	1020	625	126000	110	22400	210	42300	280
MAR.	1980	87860	1050	648	154000	120	27900	220	52300	280
APR.	1980	45610	1080	667	82100	120	15100	230	28200	280
MAY	1980	139597	828	510	192000	84	31800	160	61600	240
JUNE	1980	103020	1070	658	183000	120	33400	220	62400	280
JULY	1980	165310	1100	674	301000	120	55600	230	103500	290
AUG.	1980	178510	636	391	189000	59	28600	120	57300	200
SEPT	1980	75840	929	571	117000	97	19900	190	38100	260
TOTAL		1075764	**	**	1688000	**	296000	**	561000	**
WTD. AVG.		2939	945	581	**	100	**	190	**	260

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1010	1030	1000	1060	1040	1050	1050	1150	1010	1090	1100	941
2	995	1020	970	1020	1010	1050	1040	1140	1050	1090	1110	947
3	987	1020	1020	998	1010	1060	1040	1160	1090	1100	1110	947
4	978	1010	1020	1030	1010	1070	1030	1140	1070	1090	1120	945
5	1010	1030	1020	1030	1010	1070	1050	1140	1080	1100	1140	947
6	1020	1030	1010	1030	1010	1050	1050	1150	1090	1090	1150	950
7	1010	1030	1000	1020	1000	1080	1050	1130	1080	1150	1150	929
8	1000	1010	978	1020	992	1090	1080	1090	1080	1110	1140	918
9	1020	1000	999	1020	1000	1080	1110	1130	1050	1100	1150	944
10	1020	982	992	1020	1010	1080	1120	1160	1080	1100	1050	926
11	973	999	925	1020	1020	1070	1130	1140	1040	1100	710	946
12	991	1010	1010	1020	1020	1070	1130	1090	1030	1100	466	941
13	970	1020	1020	1020	1020	1070	1140	1020	1080	1090	338	946
14	995	1010	1010	1020	1010	1030	1150	1100	1050	1100	432	943
15	990	1030	1020	1020	1010	864	1130	1060	1050	1090	462	966
16	984	1020	1020	1020	1030	1060	1120	620	1070	1100	542	961
17	997	990	1030	1020	1030	1050	1140	947	1070	1080	661	961
18	988	1000	1030	1030	1020	1050	1130	802	1080	1100	758	963
19	997	994	1030	1020	1030	1020	1130	843	1070	1090	817	957
20	1000	1010	1030	1020	1030	1040	1130	755	1080	1090	861	959
21	1000	1010	1020	1020	1030	1060	1130	740	1080	1090	883	959
22	1000	1000	1020	1020	1020	1080	1130	944	1080	1080	903	959
23	990	1020	1020	1020	1020	1060	1120	1020	1080	1090	897	960
24	1010	1010	1020	1010	1020	1050	1110	1050	1080	1090	884	970
25	1020	1010	1010	1010	1010	1060	1170	1050	1080	1080	847	971
26	1020	995	1010	1020	1020	1050	1120	1050	1080	1100	859	951
27	1020	996	1010	1020	1020	1050	1130	1020	1080	1080	878	921
28	1020	990	1020	1020	1020	1070	1120	531	1080	1080	892	961
29	1020	999	1010	1010	1030	1070	1130	588	1080	1080	919	973
30	1030	970	1030	1000	---	1060	1140	652	1090	1090	920	745
31	1030	---	1030	1000	---	1070	---	836	---	1090	925	---
MEAN	1000	1010	1010	1020	1020	1050	1110	976	1070	1090	873	944

08459200 RIO GRANDE AT PIPELINE CROSSING BELOW LAREDO, TX

LOCATION.--Lat 27°24'09", long 99°29'18", Webb County, Hydrologic Unit 13080002, 8.7 mi (14.0 km) downstream from Texas-Mexican Railway Bridge near Laredo, and at mile 352.69 (567.48 km).

PERIOD OF RECORD.--Chemical analyses: November 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
OCT 16...	1300	1300	1000	8.1	26.5	5.7	71
NOV 15...	1149	900	1010	8.0	16.0	7.0	70
DEC 20...	0940	2650	1000	8.4	10.0	10.4	93
JAN 24...	0934	2700	988	8.3	13.0	9.3	88
FEB 21...	1316	2580	1010	8.3	17.0	9.6	100
MAR 26...	1338	5300	1060	8.2	19.0	8.2	89
APR 22...	0800	900	1170	7.8	21.5	4.8	55
MAY 27...	1130	6700	1040	8.2	28.0	6.4	82
JUN 25...	1100	3300	1100	8.2	29.0	6.7	88
JUL 23...	1216	3600	1100	8.2	30.0	6.7	89
AUG 18...	1640	4340	808	8.1	29.0	6.4	84
SEP 16...	0747	2140	947	7.9	28.0	5.6	72

DATE	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)
OCT 16...	2.4	530000	K31000	--	--	35
NOV 15...	1.6	380000	44000	--	--	14
DEC 20...	1.7	K76000	K14000	--	--	20
JAN 24...	1.1	60000	9600	--	--	16
FEB 21...	1.8	38000	2300	--	--	23
MAR 26...	1.9	K180000	K42000	--	--	58
APR 22...	4.4	4100000	150000	--	--	13
MAY 27...	1.6	>7200	7200	--	--	340
JUN 25...	1.4	52000	K17000	140	0	65
JUL 23...	1.1	52000	7000	--	--	18
AUG 18...	1.3	K920000	K280000	--	--	141
SEP 16...	2.3	1000000	90000	--	--	59

08461200 INTERNATIONAL FALCON RESERVOIR NEAR FALCON HEIGHTS, TX

LOCATION.--Lat 26°33'25", long 99°10'05", Starr County, Hydrologic Unit 13080003, on upstream side of Falcon Dam in International Falcon Reservoir, about 1 mi (2 km) west of Falcon Heights, 75 mi (121 km) downstream from Laredo, and at mile 274.81 (442.17 km).

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1976 to current year.

263351099105701 INTERNATIONAL FALCON RESERVOIR SITE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMP-LING DEPTH (FT)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
JAN							
04...	1120	1.0	1010	8.2	15.5	8.9	89
04...	1122	10	1010	8.2	15.5	8.8	88
04...	1124	20	1010	8.2	15.0	8.7	86
04...	1126	30	1010	8.1	15.0	8.6	85
04...	1130	44	1010	8.2	15.0	8.9	88
APR							
30...	0935	1.0	1070	8.4	21.0	7.3	83
30...	0937	10	1070	8.4	21.0	7.3	83
30...	0939	20	1070	8.4	21.0	7.3	83
30...	0941	30	1070	8.3	21.0	7.2	82
30...	0943	40	1070	8.3	21.0	7.0	80
30...	0945	50	1070	8.2	21.0	6.7	76
SEP							
16...	1410	1.0	1040	8.1	30.0	7.7	100
16...	1412	10	1040	8.2	28.5	8.1	103
16...	1414	20	1040	8.1	28.5	7.2	91
16...	1416	30	1050	8.0	28.5	6.9	87
16...	1418	40	1050	8.0	28.5	6.9	87
16...	1420	51	1050	8.0	28.5	6.8	86

263337099100101 INTERNATIONAL FALCON RESERVOIR SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMP-LING DEPTH (FT)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)
JAN										
04...	1030	1.0	1010	8.2	15.0	1.10	8.9	88	260	150
04...	1032	10	1010	8.2	15.0	--	8.8	87	--	--
04...	1034	20	1010	8.2	15.0	--	8.7	86	--	--
04...	1036	30	1010	8.2	15.0	--	8.7	86	--	--
04...	1038	40	1010	8.1	15.0	--	8.7	86	--	--
04...	1040	50	1010	8.1	15.0	--	8.8	87	--	--
04...	1042	60	1010	8.2	15.0	--	8.8	87	--	--
04...	1044	70	1010	8.1	15.0	--	8.8	87	--	--
04...	1046	80	1010	8.1	15.0	--	8.9	88	--	--
04...	1048	90	1010	8.2	15.0	--	8.9	88	--	--
04...	1050	102	1010	8.1	15.0	--	9.0	89	250	150
APR										
30...	0840	1.0	1070	7.3	21.0	1.10	7.3	83	280	160
30...	0842	10	1070	8.3	21.0	--	7.3	83	--	--
30...	0844	20	1070	8.3	21.0	--	7.2	82	--	--
30...	0846	30	1070	8.3	21.0	--	7.2	82	--	--
30...	0848	40	1070	7.2	21.0	--	6.9	78	--	--
30...	0850	50	1070	8.2	20.5	--	6.8	76	--	--
30...	0852	60	1070	8.2	20.5	--	6.6	74	--	--
30...	0854	70	1070	7.0	20.0	--	5.4	60	--	--
30...	0856	80	1070	7.8	20.0	--	5.0	56	--	--
30...	0858	90	1070	7.7	20.0	--	4.1	46	--	--
30...	0900	95	1070	6.6	19.5	--	3.2	36	280	160
SEP										
16...	1330	1.0	1050	8.1	30.0	1.16	7.5	97	270	170
16...	1332	5.0	1050	8.2	29.5	--	8.3	106	--	--
16...	1334	10	1050	8.2	28.5	--	8.0	101	--	--
16...	1336	20	1060	8.0	28.5	--	6.9	87	--	--
16...	1338	30	1060	8.0	28.5	--	6.6	84	--	--
16...	1340	40	1060	8.0	28.0	--	6.6	82	--	--
16...	1342	50	1060	8.0	28.0	--	6.5	81	--	--
16...	1344	60	1060	7.9	28.0	--	6.3	79	--	--
16...	1346	70	1070	7.8	28.0	--	5.5	69	--	--
16...	1348	80	1070	7.7	27.5	--	5.0	62	--	--
16...	1350	94	1070	7.6	27.5	--	4.3	54	270	170

INTERNATIONAL FALCON RESERVOIR NEAR FALCON HEIGHTS, TX--Continued

263337099100101 INTERNATIONAL FALCON RESERVOIR SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN									
04...	71	19	120	3.3	5.2	130	0	240	110
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
04...	70	19	120	3.3	5.3	130	0	240	110
APR									
30...	76	21	120	3.1	6.1	140	0	250	120
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	78	21	120	3.1	6.2	150	0	250	120
SEP									
16...	73	21	110	2.9	6.0	120	0	250	120
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	74	21	120	3.2	6.2	120	0	250	130

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN									
04...	.7	11	641	.10	.70	.80	.010	<10	<1
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	.19	.75	.94	.020	10	0
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
04...	--	11	639	.11	.73	.84	.010	<10	1
APR									
30...	.8	11	674	.08	.46	.54	.020	<10	<1
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	.05	.91	.96	.020	10	0
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	.14	.53	.67	.030	30	10
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	--	15	685	.16	.66	.82	.060	380	40
SEP									
16...	.8	12	652	.00	.74	.74	.030	<10	<1
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	.00	.63	.63	.030	10	10
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	13	673	.00	.92	.92	.040	20	20

INTERNATIONAL FALCON RESERVOIR NEAR FALCON HEIGHTS, TX--Continued

263326099092201 INTERNATIONAL FALCON RESERVOIR SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
04...	1150	1.0	1010	8.2	15.5	9.0	90
04...	1152	10	1010	8.2	15.5	9.0	90
04...	1154	20	1010	8.2	15.5	8.9	89
04...	1156	30	1010	8.2	15.0	8.8	87
04...	1158	40	1010	8.2	15.0	8.8	87
04...	1200	54	1010	8.1	15.0	8.6	85
APR							
30...	0920	1.0	1070	8.3	21.0	7.3	83
30...	0922	10	1070	8.3	21.0	7.2	82
30...	0924	20	1070	8.2	20.5	6.8	76
30...	0926	33	1070	8.2	20.5	6.7	75
SEP							
16...	1315	1.0	1060	8.1	29.5	7.5	96
16...	1317	10	1060	8.1	28.5	7.1	90
16...	1319	20	1060	8.0	28.5	6.6	84
16...	1321	30	1060	7.9	28.5	6.4	81

263815099124901 INTERNATIONAL FALCON RESERVOIR SITE BR

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
04...	1255	1.0	1020	8.2	15.5	8.7	87
04...	1258	10	1020	8.2	15.5	8.7	87
04...	1300	20	1020	8.2	15.5	8.6	86
04...	1302	30	1020	8.1	15.5	8.5	85
04...	1304	40	1020	8.1	15.5	8.4	84
04...	1306	50	1020	8.1	15.5	8.4	84
04...	1308	60	1020	8.1	15.5	8.4	84
04...	1310	73	1020	8.1	15.0	8.4	83
APR							
30...	1027	1.0	1070	8.4	21.5	7.5	86
30...	1029	10	1070	8.4	21.5	7.5	86
30...	1031	20	1070	8.4	21.5	7.5	86
30...	1033	30	1070	8.4	21.5	7.5	86
30...	1035	40	1070	8.4	21.5	7.5	86
30...	1037	52	1070	8.4	21.5	7.1	82
SEP							
16...	1450	1.0	1020	8.2	31.0	7.8	103
16...	1452	10	1020	8.3	29.0	8.4	108
16...	1454	20	1020	8.1	29.0	7.1	91
16...	1456	30	1020	8.1	29.0	6.7	86
16...	1458	40	1020	8.0	29.0	6.5	83

263815099111901 INTERNATIONAL FALCON RESERVOIR SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
04...	1225	1.0	1020	8.2	15.5	8.5	85
04...	1230	10	1020	8.1	15.5	8.5	85
04...	1232	20	1020	8.1	15.5	8.3	83
04...	1234	30	1020	8.1	15.5	8.2	82
04...	1236	40	1020	8.1	15.5	8.2	82
04...	1238	50	1020	8.1	15.5	8.2	82
04...	1240	60	1020	8.1	15.5	8.2	82
04...	1242	70	1020	8.1	15.5	8.2	82
04...	1244	80	1020	8.1	15.5	8.1	81
APR							
30...	1005	1.0	1070	8.4	21.5	7.3	84
30...	1007	10	1070	8.4	21.5	7.3	84
30...	1009	20	1070	8.4	21.5	7.3	84
30...	1011	30	1070	8.4	21.5	7.3	84
30...	1013	40	1070	8.4	21.5	7.4	85
30...	1015	50	1070	8.4	21.5	7.4	85
30...	1017	60	1070	8.4	21.0	7.2	82
30...	1019	75	1070	7.8	20.5	3.3	37
SEP							
16...	1430	1.0	1020	8.2	30.5	7.8	103
16...	1432	10	1020	8.3	29.0	7.9	101
16...	1434	20	1020	8.1	28.5	6.8	86
16...	1436	30	1030	8.0	28.5	6.2	78
16...	1438	40	1030	8.0	28.5	6.1	77
16...	1440	50	1030	7.8	28.5	5.0	63
16...	1442	60	1070	7.6	28.0	3.5	44
16...	1444	71	1080	7.3	28.0	2.3	29

264002099101701 INTERNATIONAL FALCON RESERVOIR SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)
JAN							
04...	1335	1.0	1020	8.2	16.0	1.10	8.8
04...	1337	10	1020	8.2	15.5	--	8.5
04...	1339	20	1020	8.2	15.5	--	8.3
04...	1341	30	1020	8.2	15.5	--	8.2
04...	1343	40	1020	8.2	15.5	--	8.2
04...	1345	50	1020	8.2	15.5	--	8.2
04...	1348	63	1020	8.2	15.5	--	8.0
APR							
29...	1310	1.0	1040	8.3	22.5	1.16	7.6
29...	1312	10	1040	8.2	22.5	--	7.6
29...	1314	20	1040	8.2	22.5	--	7.5
29...	1316	30	1040	8.2	22.5	--	7.4
29...	1318	40	1040	8.2	22.0	--	7.2
29...	1320	50	1040	7.9	21.5	--	5.6
29...	1322	62	1040	7.5	21.0	--	3.5
SEP							
16...	1510	1.0	1020	8.3	30.5	.98	8.4
16...	1512	10	1030	8.2	29.0	--	7.5
16...	1514	20	1030	8.2	28.5	--	7.1
16...	1516	30	1030	8.1	28.5	--	6.5
16...	1518	40	1050	8.0	28.5	--	5.3
16...	1520	50	1070	7.7	28.5	--	4.5
16...	1522	61	1070	7.7	28.0	--	4.0

INTERNATIONAL FALCON RESERVOIR NEAR FALCON HEIGHTS, TX--Continued

264002099101701 INTERNATIONAL FALCON RESERVOIR SITE CC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JAN							
04...	89	.08	.76	.84	.020	0	0
04...	85	--	--	--	--	--	--
04...	83	--	--	--	--	--	--
04...	82	--	--	--	--	--	--
04...	82	--	--	--	--	--	--
04...	82	--	--	--	--	--	--
04...	80	.09	1.1	1.2	.060	0	0
APR							
29...	88	.06	.84	.90	.020	10	10
29...	88	--	--	--	--	--	--
29...	87	--	--	--	--	--	--
29...	85	--	--	--	--	--	--
29...	83	--	--	--	--	--	--
29...	63	--	--	--	--	--	--
29...	40	.11	.78	.89	.060	10	10
SEP							
16...	109	.00	.90	.90	.020	80	10
16...	96	--	--	--	--	--	--
16...	90	--	--	--	--	--	--
16...	82	--	--	--	--	--	--
16...	67	--	--	--	--	--	--
16...	57	--	--	--	--	--	--
16...	50	.00	1.1	1.1	.030	10	10

264320099123101 INTERNATIONAL FALCON RESERVOIR SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMP-LING DEPTH (FT)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS (MG/L AS CACO3)
JAN									
03...	1710	1.0	1060	8.3	15.0	.90	8.5	86	280
03...	1712	10	1060	8.3	15.0	--	8.5	86	--
03...	1715	20	1060	8.3	15.0	--	8.5	86	--
03...	1717	30	1060	8.2	15.0	--	8.4	83	--
03...	1720	40	1060	8.2	15.0	--	8.3	83	--
03...	1722	50	1060	8.2	15.0	--	8.1	80	--
03...	1724	60	1060	8.2	15.0	--	8.0	79	--
03...	1726	70	1060	8.2	15.0	--	7.9	79	--
03...	1730	83	1060	8.0	15.0	--	6.8	67	270
APR									
29...	1155	1.0	1080	8.2	23.0	.81	7.5	87	280
29...	1157	10	1080	8.2	22.5	--	7.5	87	--
29...	1159	20	1080	8.2	22.5	--	7.6	88	--
29...	1201	30	1080	8.2	22.5	--	7.4	86	--
29...	1203	40	1080	8.1	22.0	--	6.8	78	--
29...	1205	50	1080	8.0	22.0	--	6.5	75	--
29...	1207	60	1080	7.7	21.0	--	4.7	53	--
29...	1209	70	1080	7.6	21.0	--	3.8	43	--
29...	1211	77	1080	7.6	21.0	--	4.0	45	300
SEP									
16...	1210	1.0	936	8.3	29.5	.70	8.6	110	250
16...	1212	10	938	8.2	29.0	--	7.2	94	--
16...	1214	20	962	8.1	28.5	--	6.9	88	--
16...	1216	30	962	8.1	28.5	--	6.9	88	--
16...	1218	40	966	8.1	28.5	--	6.6	83	--
16...	1220	50	966	8.1	28.5	--	6.3	81	--
16...	1222	60	972	8.0	28.5	--	5.7	73	--
16...	1224	70	982	7.8	28.5	--	4.8	62	--
16...	1226	76	983	7.6	28.5	--	3.7	47	240

INTERNATIONAL FALCON RESERVOIR NEAR FALCON HEIGHTS, TX--Continued

264328099123101 INTERNATIONAL FALCON RESERVOIR SITE DC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
JAN									
03...	150	73	20	120	3.2	5.0	140	0	230
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	160	76	20	120	3.2	5.3	140	0	230
APR									
29...	160	77	21	120	3.1	6.2	150	0	230
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	160	77	21	120	3.1	6.0	150	0	230
SEP									
16...	160	67	19	100	2.8	5.8	110	0	220
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	160	66	19	110	3.1	6.0	120	0	230

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JAN									
03...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
APR									
29...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SEP									
16...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16...	--	--	--	--	--	--	--	--	--
16...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

INTERNATIONAL FALCON RESERVOIR NEAR FALCON HEIGHTS, TX--Continued

264858099154201 INTERNATIONAL FALCON RESERVOIR SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
03...	1625	1.0	1070	8.3	15.0	9.3	92
03...	1628	10	1070	8.3	15.0	9.3	92
03...	1630	20	1070	8.3	15.0	9.3	92
03...	1632	30	1070	8.3	15.0	9.2	91
03...	1634	40	1070	8.3	15.0	9.2	92
03...	1636	50	1070	8.3	15.5	9.1	91
03...	1638	60	1070	8.3	15.5	9.1	91
APR							
29...	1105	1.0	1100	8.3	23.0	7.4	88
29...	1107	10	1100	8.2	22.5	7.4	88
29...	1109	20	1100	8.1	22.5	7.2	84
29...	1111	30	1100	8.1	22.5	7.2	84
29...	1113	40	1100	8.1	22.5	6.8	79
29...	1115	50	1100	7.2	22.5	6.0	70
29...	1117	58	1100	7.1	22.5	5.7	66
SEP							
16...	1605	1.0	880	8.4	29.5	8.4	108
16...	1607	10	880	8.2	29.0	7.0	90
16...	1609	20	880	8.2	28.5	6.8	86
16...	1611	30	880	8.2	28.5	6.8	86
16...	1613	40	880	8.2	28.5	6.5	82
16...	1615	50	880	8.0	28.5	6.2	78
16...	1617	58	880	8.0	28.5	5.9	75

[illegible] INTERNATIONAL FALCON RESERVOIR SITE [illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

[illegible]

265014099190601 INTERNATIONAL FALCON RESERVOIR SITE GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMP-LING DEPTH (FT)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)
JAN							
03...	1545	1.0	1150	8.4	13.0	.80	9.6
03...	1547	10	1150	8.4	13.0	--	9.6
03...	1550	20	1150	8.4	13.0	--	9.5
03...	1552	30	1150	8.4	13.0	--	9.5
03...	1555	45	1150	8.4	13.0	--	9.5
APR							
29...	1520	1.0	1170	8.2	23.0	.30	7.2
29...	1522	10	1170	8.2	23.0	--	7.2
29...	1524	20	1170	8.2	23.0	--	7.2
29...	1526	30	1170	8.1	22.5	--	7.0
29...	1528	37	1170	7.9	22.5	--	5.4
SEP							
16...	1700	1.0	830	8.5	29.5	.40	10.9
16...	1702	10	830	8.1	28.0	--	7.1
16...	1704	20	830	8.0	28.0	--	6.2
16...	1706	30	830	7.8	27.5	--	3.6
16...	1708	42	1040	7.5	27.5	--	2.6

DATE	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JAN							
03...	[illegible]	.07	.88	.95	.030	0	0
03...	[illegible]	--	--	--	--	--	--
03...	[illegible]	--	--	--	--	--	--
03...	[illegible]	--	--	--	--	--	--
03...	[illegible]	[illegible]	[illegible]	[illegible]	.030	10	0
APR							
29...	[illegible]	[illegible]	1.0	1.0	.040	[illegible]	[illegible]
29...	[illegible]	--	--	--	--	--	--
29...	[illegible]	--	--	--	--	--	--
29...	[illegible]	--	--	--	--	--	--
29...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SEP							
16...	[illegible]	[illegible]	1.0	1.0	[illegible]	[illegible]	0
16...	[illegible]	--	--	--	--	--	--
16...	[illegible]	--	--	--	--	--	--
16...	[illegible]	--	--	--	--	--	--
16...	[illegible]	[illegible]	1.0	1.0	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

INTERNATIONAL FALCON RESERVOIR NEAR FALCON HEIGHTS, TX--Continued

265213099190801 INTERNATIONAL FALCON RESERVOIR SITE HC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
JAN									
03...	170	81	21	120	3.1	4.9	140	4	240
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	160	81	20	120	3.1	4.8	140	4	240
APR									
29...	160	78	22	120	3.1	6.3	150	0	260
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	170	81	22	120	3.1	6.4	150	0	260
SEP									
16...	130	59	16	89	2.7	5.6	100	3	190
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	130	70	17	98	2.7	5.1	140	0	200

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JAN									
03...	110	13	663	.13	1.0	1.1	.040	<10	<1
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	.13	.88	1.0	.030	60	0
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	110	13	662	.13	.86	1.0	.030	10	2
APR									
29...	120	16	694	.00	1.5	1.5	.030	220	20
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	.00	.90	.90	.070	230	20
29...	--	--	--	.01	1.6	1.6	.060	170	60
29...	120	15	699	.01	1.1	1.1	.070	310	30
SEP									
16...	92	11	515	.00	.50	.50	.030	60	6
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	.00	1.2	1.2	.080	20	8
16...	100	14	573	.00	1.6	1.3	.150	60	10

263337099100101 INTERNATIONAL FALCON RESERVOIR SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)
JAN							
04...	1030	1.0	2	100	<1	0	0
04...	1040	50	--	--	--	--	--
04...	1050	102	2	100	<1	0	0
APR							
30...	0840	1.0	2	100	<1	0	2
30...	0848	40	--	--	--	--	--
30...	0854	70	--	--	--	--	--
30...	0900	95	2	100	<1	0	2
SEP							
16...	1330	1.0	2	100	<1	10	1
16...	1344	60	--	--	--	--	--
16...	1350	94	2	100	<1	10	1

DATE	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
JAN							
04...	<10	0	<1	.6	1	0	<3
04...	10	--	0	--	--	--	--
04...	<10	1	1	.6	1	0	3
APR							
30...	<10	0	<1	.0	1	0	<3
30...	10	--	0	--	--	--	--
30...	30	--	10	--	--	--	--
30...	380	1	40	.1	1	0	3
SEP							
16...	<10	0	<1	.3	1	0	<3
16...	10	--	10	--	--	--	--
16...	20	0	20	.2	1	0	3

INTERNATIONAL FALCON RESERVOIR NEAR FALCON HEIGHTS, TX--Continued

263337099100101 INTERNATIONAL FALCON RESERVOIR SITE AC

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	JAN 4,80	APR 30,80	SEP 16,80
TIME	1031	0841	1331
TOTAL CELLS/ML	37000	1900	340000
DIVERSITY: DIVISION	0.6	1.2	0.1
.CLASS	0.6	1.2	0.1
..ORDER	0.9	1.7	0.2
...FAMILY	1.7	2.3	0.5
....GENUS	2.5	3.0	1.1

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHARACIACEAE						
....SCHROEDERIA	--	-	--	-	*	0
...OOCYSTACEAE						
....ANKISTRODESMUS	190	1	26	1	*	0
....CHLORELLA	390	1	26	1	--	-
....CHODATELLA	--	-	26	1	*	0
....CLOSTERIOPSIS	--	-	26	1	--	-
....KIRCHNERIELLA	190	1	--	-	--	-
....OOCYSTIS	--	-	65	3	*	0
....SELENASTRUM	--	-	100	6	--	-
....TETRAEDRON	--	-	13	1	--	-
...SCENEDESMACEAE						
....CRUCIGENIA	--	-	150	8	*	0
....SCENEDESMUS	610	2	540#	29	*	0
....TETRASTRUM	*	0	--	-	--	-
..TETRASPORALES						
...COCCOMYXACEAE						
....ELAKATOTHRIX	*	0	--	-	--	-
..ULOTRICHALES						
...ULOTRICHACEAE						
....GEMINELLA	1600	4	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	13	1	--	-
....PLATYMONAS	*	0	--	-	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	*	0	13	1	*	0
..PENNALES						
...FRAGILARIACEAE						
....SYNEDRA	--	-	--	-	*	0
...NAVICULACEAE						
....NAVICULA	570	2	--	-	*	0
...NITZSCHIACEAE						
....NITZSCHIA	200	1	38	1	*	0
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	38	1	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..[illegible]						
...[illegible]						
....[illegible]	200	1	[illegible]	[illegible]	[illegible]	1
..[illegible]						
...[illegible]						
....[illegible]	[illegible]	1	[illegible]	[illegible]	--	-
....[illegible]	--	-	--	-	[illegible]	[illegible]
...[illegible]						
....[illegible]	[illegible]	[illegible]	--	-	[illegible]	[illegible]
....[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
....[illegible]	--	-	--	-	[illegible]	[illegible]
....[illegible]	[illegible]	[illegible]	--	-	--	-
...[illegible]						
....[illegible]	[illegible]	[illegible]	--	-	--	-

NOTE: [illegible]

INTERNATIONAL FALCON RESERVOIR NEAR FALCON HEIGHTS, TX--Continued

265213099190801 INTERNATIONAL FALCON RESERVOIR SITE HK

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	JAN 3,80	APR 29,80	SEP 16,80
TIME	1512	1441	1636
TOTAL CELLS/ML	200000	49000	390000
DIVERSITY: DIVISION	0.4	0.7	0.2
.CLASS	0.4	0.7	0.2
..ORDER	0.0	1.0	0.4
...FAMILY	0.0	1.6	0.8
....GENUS	0.0	1.8	1.0

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHARACIACEAE						
....SCHROEDERIA	--	-	--	-	*	0
...COELASTRACEAE						
....COELASTRUM	--	-	--	-	*	0
...OOCYSTACEAE						
....ANKISTRODESMUS	1600	1	--	-	*	0
....CHLORELLA	1200	1	--	-	--	-
....DICTYOSPHAERIUM	--	-	310	1	*	0
....KIRCHNERIELLA	*	0	--	-	--	-
....OOCYSTIS	--	-	*	0	*	0
....SELENASTRUM	--	-	*	0	*	0
....TETRAEDRON	--	-	*	0	--	-
...SCENEDESMACEAE						
....SCENEDESMUS	*	0	1200	3	3000	1
....TETRASTRUM	--	-	310	1	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CARTERIA	--	-	2400	5	*	0
....CHLAMYDOMONAS	--	-	*	0	*	0
....PLATYMONAS	3900	2	--	-	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	*	0	310	1	*	0
..PENNALES						
...ACHNANTHACEAE						
....COCCONEIS	--	-	670	1	*	0
...FRAGILARIACEAE						
....SYNEDRA	--	-	--	-	*	0
...NAVICULACEAE						
....NAVICULA	*	0	--	-	--	-
...NITZSCHIACEAE						
....NITZSCHIA	*	0	*	0	*	0
.CHRYSOPHYCEAE						
..CHRYSOMONADALES						
...OCHROMONADACEAE						
....OCHROMONAS	--	-	*	0	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE	*	0	--	-	--	-
..CRYPTOMONADALES						
...CRYPTOCHRYSIDACEAE						
....CHROOMONAS	--	-	*	0	*	0
...CRYPTOMONADACEAE						
....CRYPTOMONAS	[illegible]	1	*	0	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
[illegible]						
[illegible]						
[illegible]						
[illegible]	[illegible]	[illegible]	--	-	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	*	[illegible]
[illegible]	--	-	--	-	*	0
[illegible]						
[illegible]						
[illegible]	--	-	[illegible]	[illegible]	--	-
[illegible]	*	[illegible]	[illegible]	[illegible]	--	-
[illegible]						
[illegible]	[illegible]	[illegible]	--	-	[illegible]	[illegible]
[illegible]	--	-	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	--	-	--	-
[illegible]	*	[illegible]	--	-	--	-
[illegible]						
[illegible]	[illegible]	[illegible]	--	-	[illegible]	[illegible]
[illegible]						
[illegible]						
[illegible]						
[illegible]						
[illegible]	*	[illegible]	--	-	--	-
[illegible]						
[illegible]						
[illegible]						
[illegible]						
[illegible]	*	[illegible]	--	-	--	-
[illegible]						
[illegible]						
[illegible]	--	-	*	[illegible]	--	-

NOTE: [illegible]
[illegible]

08461300 RIO GRANDE BELOW FALCON DAM, TX

LOCATION.--Lat 26°33'25", long 99°10'05", Starr County, Hydrologic Unit 13090001, U.S. Tailrace at Falcon Dam.

DRAINAGE AREA.--159,270 mi² (412,509 km²), United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECOD.--Chemical analyses: July 1955 to current year.

REMARKS.--Records of specific conductance and discharge for water year 1980 are given in International Boundary and Water Commission Water Bulletins Nos. 49 and 50.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT 15...	0915	3300	995	8.1	25.0	250	140	67	19
NOV 19...	0900	908	1020	7.8	20.5	250	140	69	19
DEC 17...	0925	259	1030	7.6	15.5	260	150	70	20
JAN 14...	0900	1990	1020	7.8	14.5	260	150	71	20
FEB 19...	0915	2800	1050	8.0	14.5	260	150	71	21
MAR 24...	1100	3330	1070	7.7	15.5	270	160	74	21
APR 14...	1005	5900	1080	7.9	18.0	270	150	75	20
MAY 19...	0930	6290	1090	8.1	24.5	290	170	78	22
JUN 16...	1030	3620	1080	7.5	26.5	270	150	73	21
JUL 14...	0815	2970	1090	7.8	28.0	270	160	73	21
AUG 18...	1000	141	1110	7.6	26.5	280	170	74	22
SEP 23...	1530	5020	1060	7.6	26.0	260	160	69	21

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 15...	110	3.1	5.9	130	0	240	110	12	628
NOV 19...	110	3.0	5.7	130	0	220	110	12	610
DEC 17...	110	3.0	5.2	130	0	230	110	12	621
JAN 14...	110	3.0	5.1	130	0	240	110	11	631
FEB 19...	110	2.9	5.0	160	0	240	110	11	638
MAR 24...	110	2.9	5.1	160	0	260	110	11	660
APR 14...	110	2.9	5.6	160	0	250	110	11	650
MAY 19...	120	3.1	5.6	160	0	260	120	12	668
JUN 16...	110	2.9	5.2	160	0	250	110	12	650
JUL 14...	120	3.2	5.0	130	0	250	120	13	667
AUG 18...	120	3.4	6.4	130	0	280	130	14	700
SEP 23...	120	3.7	6.0	130	0	250	130	13	668

08464700 RIO GRANDE AT FORT RINGGOLD, RIO GRANDE CITY, TX

LOCATION.--Lat 26°22'05", long 98°48'20", Starr County, Hydrologic Unit 13090001, at gaging station about 1 mi (2 km) downstream from Rio Grande City, 3.9 mi (6.3 km) downstream from mouth of Rio San Juan, and 1,014.3 mi (1,632.0 km) downstream from the American Dam at El Paso.

DRAINAGE AREA.--174,362 mi² (451,598 km²), United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECORD.--Chemical analyses: January 1959 to current year.

REMARKS.--Records of specific conductance and discharge for water year 1980 are given in International Boundry and Water Commission Water Bulletins Nos. 49 and 50.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT									
15...	1300	3030	1010	8.1	26.0	250	140	68	19
NOV									
19...	1430	2530	1060	7.6	22.0	250	140	69	19
DEC									
17...	1655	239	1550	7.6	12.0	340	190	92	26
JAN									
14...	1610	2738	1040	8.2	16.5	270	150	72	21
FEB									
19...	1555	1159	1240	7.8	17.0	290	170	79	23
MAR									
17...	1445	3070	1090	7.7	18.0	270	160	75	21
APR									
14...	1515	4120	1110	7.7	18.0	280	170	80	20
MAY									
19...	1500	9180	1090	7.4	25.0	280	160	77	21
JUN									
20...	0905	7030	1100	7.4	26.5	270	160	74	21
JUL									
24...	1230	4590	1100	7.7	28.5	260	150	70	21
AUG									
18...	1500	114	1330	7.4	29.0	290	160	90	17
SEP									
08...	1545	1860	1120	7.5	29.0	280	160	76	22

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT									
15...	110	3.0	6.1	130	0	340	110	12	628
NOV									
19...	110	3.0	5.8	160	0	230	120	11	636
DEC									
17...	190	4.5	5.3	180	0	300	220	11	963
JAN									
14...	110	2.9	5.3	140	0	260	130	10	667
FEB									
19...	140	3.6	6.2	150	0	280	150	9.7	762
MAR									
17...	130	3.2	5.2	140	0	260	130	11	661
APR									
14...	120	3.1	5.5	140	0	250	120	11	676
MAY									
19...	110	2.9	6.4	150	0	260	110	12	650
JUN									
20...	130	3.3	5.5	140	0	230	130	12	672
JUL									
24...	120	3.3	6.0	130	0	260	130	12	673
AUG									
18...	170	4.3	7.0	160	0	190	250	11	816
SEP									
08...	120	3.1	6.1	130	0	260	130	12	660

08466300 RIO GRANDE NEAR LOS EBANOS, TX

LOCATION.--Lat 26°14'15", long 98°33'49", Hidalgo County, Hydrologic Unit 13090001, on Farm Road 886 at U.S. Border Port of Entry near Los Ebanos and at mile 204.37 (328.83 km).

PERIOD OF RECORD.--Chemical analyses: June 1977 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT 15...	1415	3020	1060	8.1	26.0	260	140	71	20
NOV 19...	1515	1130	1210	7.6	21.0	280	150	76	21
DEC 17...	1730	240	2080	7.6	12.0	480	300	130	37
JAN 14...	1650	3500	1060	8.1	16.5	270	160	75	21
FEB 19...	1640	590	1590	7.7	18.5	360	210	97	29
MAR 17...	1600	2000	1170	7.7	19.0	290	170	78	22
APR 14...	1615	6050	1120	7.5	18.0	280	170	77	22
MAY 19...	1600	8600	1110	7.8	25.0	280	160	77	22
JUN 20...	1010	4120	1160	7.5	27.0	290	170	81	21
JUL 24...	1313	5450	1020	7.5	28.0	240	130	68	16
AUG 18...	1630	118	1480	7.5	29.0	380	220	110	25
SEP 08...	1718	670	1330	7.6	28.5	300	190	80	25

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 15...	120	3.2	6.7	140	0	260	120	12	659
NOV 19...	130	3.4	6.0	130	0	250	190	12	719
DEC 17...	270	5.4	6.2	210	0	390	340	13	1290
JAN 14...	120	3.2	5.2	140	0	250	120	11	671
FEB 19...	190	4.3	6.8	180	0	340	220	12	984
MAR 17...	130	3.4	5.6	140	0	260	160	11	713
APR 14...	120	3.1	5.9	140	0	250	120	12	676
MAY 19...	120	3.1	5.7	130	0	250	120	12	661
JUN 20...	130	3.3	5.3	140	0	260	130	12	700
JUL 24...	110	3.1	5.3	130	0	230	120	12	606
AUG 18...	170	3.8	7.3	190	0	290	200	14	908
SEP 08...	160	4.0	6.6	160	0	300	180	14	830

08469200 RIO GRANDE BELOW ANZALDUAS DAM, TX

LOCATION.--Lat 26°08'00", long 98°20'05", Hidalgo County, Hydrologic Unit 13090002, at gaging station 0.5 mi (0.8 km) downstream from Anzalduas Dam, 12.2 mi (19.6 km) from Hidalgo, and 1,077.1 mi (1,733.1 km) downsteam from the American Dam at El Paso.

DRAINAGE AREA.--176,112 mi² (456,130 km²), United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECORD.--Chemical analyses: March 1959 to current year. Pesticide analyses: October 1968 to September 1971.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1977 to current year.

REMARKS.--Records of and discharge for water year 1979 are given in International Boundary and Water Commission Water Bulletins Nos. 49 and 50. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equation developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,880 micromhos Feb. 21, 1978; minimum daily, 517 micromhos Sept. 13, 1978.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,710 micromhos Dec. 20; minimum daily, 595 micromhos Aug. 17.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
OCT									
16...	1000	1300	1280	8.3	26.0	290	170	77	23
NOV									
20...	--	946	1460	7.9	20.5	320	200	85	26
DEC									
17...	0850	200	1930	7.6	13.0	440	290	120	35
JAN									
15...	1400	1000	1100	8.1	18.5	280	160	77	21
FEB									
19...	1130	600	1520	7.9	17.0	340	220	91	28
MAR									
18...	--	1900	1240	7.7	20.0	310	190	85	24
APR									
14...	0920	2800	1150	7.7	16.0	280	160	77	21
MAY									
19...	1400	4840	1320	7.6	25.0	310	190	86	24
JUN									
16...	1230	4300	1220	7.5	29.0	290	180	79	23
JUL									
24...	1600	3200	1080	7.5	29.0	240	140	66	18
AUG									
14...	0830	1290	1650	7.4	29.0	360	220	96	28
SEP									
10...	--	600	1400	7.7	30.0	330	200	88	26

DATE	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
OCT									
16...	160	4.1	6.3	160	0	280	170	12	797
NOV									
20...	170	4.1	5.5	150	0	290	210	12	872
DEC									
17...	260	5.0	6.7	190	0	380	310	12	1200
JAN									
15...	120	3.1	6.4	160	0	[illegible]	130	11	696
FEB									
19...	180	4.2	6.6	150	0	330	210	12	932
MAR									
18...	140	3.5	5.5	150	0	270	150	10	738
APR									
14...	120	3.1	5.2	160	0	250	130	12	684
MAY									
19...	160	3.9	5.5	150	0	310	160	13	832
JUN									
16...	140	3.6	5.5	160	0	270	150	13	750
JUL									
24...	130	3.7	6.5	120	0	260	140	13	673
AUG									
14...	210	4.8	7.1	130	0	[illegible]	240	13	1010
SEP									
10...	170	4.1	6.8	130	0	310	210	14	850

08469200 RIO GRANDE BELOW ANZALDUAS DAM, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	40469	1390	844	92200	190	20700	280	30300	330
NOV.	1979	35334	1560	951	90700	220	21200	310	29400	370
DEC.	1979	20030	1770	1080	58700	270	14800	340	18400	420
JAN.	1980	34868	1180	714	67200	150	14200	240	22600	290
FEB.	1980	25685	1390	847	58700	190	13200	280	19300	330
MAR.	1980	49490	1350	822	110000	180	24500	270	36300	330
APR.	1980	79585	1170	709	152000	150	32000	240	51400	280
MAY	1980	90076	1240	749	182000	160	39000	250	61000	300
JUNE	1980	112689	1210	732	223000	160	47200	250	74900	290
JULY	1980	89110	1160	697	168000	150	35000	240	56700	280
AUG.	1980	62179	1140	687	115000	150	26700	230	38600	270
SEPT	1980	36571	1270	768	75800	170	16400	260	25300	310
TOTAL		676086	**	**	1394000	**	303000	**	464000	**
WTD. AVG.		1847	1260	763	**	170	**	250	**	300

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1530	1330	1360	1430	1160	2070	1160	1170	1330	1140	1130	1920
2	1660	1480	1270	1460	1160	2240	1170	1170	1360	1140	1110	1600
3	1870	1520	1250	1460	1200	1760	1200	1170	1280	1130	1120	1410
4	2040	1550	1270	1500	1210	1790	1230	1170	1300	1130	1110	1310
5	1990	1970	1250	1510	1220	1400	1230	1170	1300	1150	1150	1310
6	1960	2080	1230	1510	1210	1230	1220	1180	1220	1180	1120	1310
7	1960	1970	1360	1490	1250	1290	1230	1190	1210	1190	1160	1340
8	1630	1850	1330	1480	1250	1280	1280	1210	1210	1170	1130	1350
9	1700	1870	1390	1470	1270	1330	1260	1210	1200	1150	1130	1360
10	1780	1780	1470	1360	1250	1400	1230	1220	1220	1150	1330	1400
11	1610	1690	1500	1280	1260	1520	1210	1210	1230	1170	738	1650
12	1780	1540	1560	1160	1280	1440	1200	1210	1230	1170	649	1670
13	1590	1540	1630	1120	1270	1360	1220	1210	1210	1140	889	1690
14	1340	1370	1680	1120	1360	1330	1140	1230	1220	1150	1620	1610
15	1270	1380	1650	1090	1360	1330	1140	1230	1240	1160	762	1250
16	1230	1260	1750	1120	1350	1260	1160	1230	1230	1130	509	1210
17	1230	1180	1840	1060	1310	1250	1150	1230	1220	1130	595	1210
18	1230	1190	2310	1060	1480	1250	1150	1230	1220	1160	640	1210
19	1260	1320	2630	1090	1310	1250	1160	1190	1210	1190	697	1190
20	1280	1480	2710	1070	1490	1230	1150	1360	1220	1180	704	1170
21	1300	1310	2260	1100	1130	1230	1160	1270	1310	1170	930	1170
22	1200	1380	2190	1100	1410	1280	1140	1250	1180	1140	881	1170
23	1190	1400	2180	1110	1730	1280	1140	1280	1170	1130	993	1160
24	1170	1400	2130	1140	1410	1280	1170	1420	1170	1080	1110	1180
25	1160	1360	2400	1130	1850	1270	1170	1450	1170	1200	1440	1150
26	1160	1330	2000	1120	1030	1210	1170	1470	1180	1100	1070	1150
27	1190	1370	1630	1130	1060	1180	1160	1440	1190	1170	1020	1130
28	1230	1400	1370	1130	1090	1130	1160	1500	1200	1180	1030	1220
29	1300	1460	1370	1130	1080	1150	1150	1530	1270	1160	1100	1210
30	1270	1410	1380	1140	---	1170	1150	1530	1170	1170	1070	1210
31	1270	---	1300	1150	---	1170	---	1630	---	1150	1070	---
MEAN	1460	1530	1700	1250	1450	1360	1180	1280	1220	1160	1150	1310

08470200 NORTH FLOODWAY NEAR SEBASTIAN, TX

LOCATION.--Lat 26°18'51", long 97°46'36", Cameron County, Hydrologic Unit 12110208, at International Boundary and Water Commission gaging station on U.S. Highway 77 and approximately 2 mi (3 km) south of Sebastian.

PERIOD OF RECORD.--Sediment records: February 1966 to current year.

REMARKS.--Records of discharge are given in International Boundary and Water Commission Water Bulletins Nos. 49 and 50.

MONTHLY AND ANNUAL SUMMARY OF WATER AND SUSPENDED-SEDIMENT DISCHARGE

WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	DISCHARGE (CFS-DAYS)	MEAN WEIGHTED SUSPENDED SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS)
Oct. 1979...	6069	144	2360
NOV..........	5985	119	1920
DEC..........	5923	88	1410
JAN. 1980...	7151	97	1870
FEB..........	6587	75	1330
MAR..........	6333	123	2110
APR..........	6364	189	3230
MAY..........	10701	212	6170
JUNE.........	7318	186	3680
JULY.........	5886	157	2490
AUG..........	16396	204	9040
SEPT.........	10986	204	6050
TOTAL.......	95701	169	43690

[illegible]

LOCATION.--[illegible]

PERIOD OF RECORD.--[illegible]

REMARKS.--[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER [illegible] TO SEPTEMBER [illegible]

DATE	TIME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JAN [illegible]...	[illegible]	.00	0	.00	.00	.0	.0	0	.00	.0
JUL [illegible]...	[illegible]	.00	0	.00	.00	.0	.0	0	.00	.0

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JAN [illegible]...	.00	7.2	.00	.0	.00	.00	.0	.00	.00	.0
JUL [illegible]...	.00	[illegible]	.00	.0	.00	.00	.0	.00	.00	.0

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JAN [illegible]...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0
JUL [illegible]...	.00	.00	.0	.00	.0	.00	.0	.00	.00	.0

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JAN [illegible]...	.00	.00	.00	.00	0	0	.00	.00	.00	.00
JUL [illegible]...	.00	.00	.00	.00	0	0	.00	---	---	---

08470300 ARROYO COLORADO FLOODWAY AT EL FUSTES SIPHON, SOUTH OF MERCEDES, TX--Continued

MONTHLY AND ANNUAL SUMMARY OF WATER AND SUSPENDED-SEDIMENT DISCHARGE

WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	DISCHARGE (CFS-DAYS)	MEAN WEIGHTED SUSPENDED SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS)
OCT. 1979...	4077	189	2080
NOV.........	4545	76	930
DEC.........	5510	89	1320
JAN. 1980...	4481	102	1340
FEB.........	4055	94	1030
MAR.........	5147	159	2210
APR.........	4347	130	1520
MAY.........	6800	199	3660
JUNE........	5376	125	1810
JULY........	5176	102	1420
AUG.........	13325	261	9380
SEPT........	5016	145	1970
TOTAL.......	67855	157	18700

08474550 RIO GRANDE AT U.S. HIGHWAY 77 AT BROWNSVILLE, TX

LOCATION.--Lat 25°53'54", long 97°29'51", Cameron County, Hydrologic Unit 12110208, on upstream side of bridge on U.S. Highway 77 in Brownsville and at mile 55.67 (89.57 km).

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
OCT 17...	1421	1900	7.8	28.0	10	17	8.5	108	4.2	250
NOV 14...	1601	1960	8.2	19.0	5	33	10.0	105	1.3	69
DEC 19...	0932	1650	8.4	13.0	10	6.0	12.4	116	3.7	K3
JAN 25...	0757	1500	7.9	16.0	5	11	8.7	88	2.0	8C
FEB 20...	1114	1370	8.3	16.5	5	17	11.0	112	3.5	440
MAR 26...	0803	1480	7.9	21.0	20	19	7.0	78	3.0	5000
APR 22...	1650	1480	7.9	22.5	5	22	8.5	97	2.9	2200
MAY 28...	0900	1550	8.4	29.5	15	48	7.9	103	2.4	440
JUN 24...	1300	1260	8.0	29.5	5	22	6.2	81	2.0	750
JUL 22...	1456	1360	8.1	31.0	5	22	7.8	104	2.3	5600
AUG 21...	1009	837	8.2	29.0	10	70	7.1	91	1.4	34
SEP 17...	1118	1770	7.9	30.0	8	31	8.3	109	1.9	K320

DATE	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 17...	350	270	1200	39	10	.00	1.1	.050	12
NOV 14...	350	330	1240	77	5	.27	.91	.080	9.0
DEC 19...	320	250	1060	21	13	.02	.86	.040	9.4
JAN 25...	310	180	968	12	1	.04	.63	.040	5.5
FEB 20...	290	180	--	40	22	.18	.81	.010	7.2
MAR 26...	280	200	942	41	8	.02	.92	.080	6.7
APR 22...	310	200	956	43	12	.03	.84	.050	10
MAY 28...	280	210	941	69	29	.33	.84	.120	9.7
JUN 24...	280	150	813	43	12	.01	1.4	.050	6.6
JUL 22...	310	160	848	52	28	.02	1.0	.070	5.3
AUG 21...	130	130	523	172	139	.70	1.0	.100	7.6
SEP 17...	360	270	1140	32	8	.00	1.0	.060	13

08475000 RIO GRANDE NEAR BROWNSVILLE, TX
(National stream-quality accounting network)

LOCATION.--Lat 25°52'35", long 97°27'15", Cameron County, Hydrologic Unit 13090002, at International Boundary and Water Commission gaging station, 1,000 ft (300 m) downstream from El Jardin pumping plant, 6.8 mi (10.9 km) below International Bridge between Brownsville and Matamoros, Tamps., Mex., and 48.8 mi (78.5 km) above the Gulf of Mexico.

DRAINAGE AREA.--176,333 mi^2 (456,702 km^2).

PERIOD OF RECORD.--Chemical analyses: October 1967 to January 1968. Chemical and biochemical analyses: October 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1967 to current year.
WATER TEMPERATURES: October 1966 to current year.
SUSPENDED-SEDIMENT DISCHARGE: February 1966 to current year.

REMARKS.--Records of discharge furnished by International Boundary and Water Commission. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continues) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,130 micromhos May 29, 1972; minimum daily, 337 micromhos Sept. 3, 1967.
WATER TEMPERATURES (1966-69, 1970-75, 1977-80): Maximum daily, 33.5°C on several days during July and August 1978; minimum daily, 8.0°C Jan. 10, 1967.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 3,560 mg/L Sept. 16, 1971; minimum daily mean, 4 mg/L Apr. 26, 1970, Aug. 16, 18, 24, 27, 1977.
SEDIMENT LOADS: Maximum daily, 83,500 tons Sept. 16, 1971; minimum daily, 0.18 tons July 22, 1978.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,370 micromhos Dec. 19; minimum daily, 790 micromhos Aug. 15.
WATER TEMPERATURES: Maximum daily, 32.5°C July 27.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,910 mg/L Aug. 11; minimum daily mean, 19 mg/L Dec. 3, 6, 13.
SEDIMENT LOADS: Maximum daily, 18,800 tons Aug. 11; minimum daily, 0.84 tons Sept. 18.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT											
17...	1122	1100	1900	7.8	27.5	25	7.8	98	3.8	3000	250
NOV											
14...	1200	900	1930	8.3	19.0	45	8.4	88	2.0	420	320
DEC											
18...	1320	2700	1530	8.5	13.0	2.5	12.5	116	4.0	K1500	880
JAN											
24...	1527	100	1494	8.1	16.0	32	9.6	97	2.9	120	<8
FEB											
20...	1245	330	1360	8.5	17.5	25	10.8	112	3.2	4400	700
MAR											
25...	1224	165	1480	8.2	22.0	42	8.2	92	2.9	K73	K27
APR											
23...	0930	20	1780	8.0	22.0	32	8.4	95	2.9	110	100
MAY											
28...	1305	568	1440	8.3	30.5	68	--	--	1.6	600	420
JUN											
24...	1100	221	1300	8.3	30.0	8.6	4.9	64	1.9	270	120
JUL											
22...	1205	52	1300	8.3	31.0	17	7.4	97	1.9	160	160
AUG											
11...	0745	3390	--	--	27.0	--	--	--	--	--	--
14...	1235	4000	--	--	30.0	--	--	--	--	--	--
20...	1057	791	1000	8.1	29.0	140	7.4	95	.6	K230	K80
SEP											
17...	1220	11	1890	7.9	30.0	33	7.6	100	2.7	K200	67

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT											
17...	510	250	140	39	200	3.9	7.7	320	0	340	260
NOV											
14...	440	280	120	35	240	5.0	6.1	200	0	360	310
DEC											
18...	370	210	100	29	180	4.1	6.0	180	4	310	210
JAN											
24...	390	210	110	29	150	3.3	5.7	220	0	290	190
FEB											
20...	370	230	100	28	150	3.4	5.4	160	4	290	180
MAR											
25...	400	250	110	31	150	3.3	6.1	180	0	320	200
APR											
23...	500	280	140	37	190	3.7	6.7	270	0	360	250
MAY											
28...	310	190	86	24	180	4.4	6.2	160	0	300	210
JUN											
24...	300	220	78	25	150	3.8	5.6	150	0	310	160
JUL											
22...	320	200	87	25	150	3.6	5.8	160	0	300	160
AUG											
11...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
20...	230	120	64	17	120	3.4	6.6	130	0	180	150
SEP											
17...	480	290	130	38	220	4.4	7.6	240	0	370	310

08475000 RIO GRANDE NEAR BROWNSVILLE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)
OCT 17...	.5	22	1200	1170	.02	.05	.100	.020	.81	.47
NOV 14...	1.1	15	1230	1190	.45	.39	.130	.050	.80	.77
DEC 18...	.7	11	970	940	.10	.10	.010	.010	.84	.41
JAN 24...	.6	11	955	895	.04	.02	.010	.010	.66	.42
FEB 20...	.7	12	870	850	.20	.14	.010	.010	.65	.57
MAR 25...	.7	13	950	919	.00	.00	.040	.020	1.1	.55
APR 23...	.7	19	1140	1140	.01	.00	.080	.020	.92	.84
MAY 28...	.7	13	903	894	.43	.41	.030	.010	1.1	.87
JUN 24...	.9	14	840	791	.01	.01	.010	.030	.66	.43
JUL 22...	.8	15	832	816	.00	.00	.000	.000	.83	.53
AUG 11...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
20...	.5	7.0	584	612	.64	.62	.000	.000	1.4	.68
SEP 17...	.7	21	1240	1210	.00	.00	.000	.000	.56	.56

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED (MG/L AS C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 17...	.91	.49	.030	.000	--	7.0	.7	118	350	93
NOV 14...	.93	.82	.080	.010	5.7	--	--	155	377	89
DEC 18...	.85	.42	.050	.000	5.9	--	--	35	255	81
JAN 24...	.67	.43	.070	.010	--	5.8	2.3	76	21	99
FEB 20...	.66	.58	.010	.010	11	--	--	58	52	99
MAR 25...	1.1	.57	.090	.020	9.4	--	--	58	26	99
APR 23...	1.0	.86	.060	.000	--	11	1.7	92	5.0	93
MAY 28...	1.1	.88	.110	.020	7.6	--	--	127	195	75
JUN 24...	.67	.46	.050	.010	7.2	--	--	48	29	98
JUL 22...	.83	.53	.060	.010	--	4.2	--	35	4.9	97
AUG 11...	--	--	--	--	--	--	--	1910	17500	88
14...	--	--	--	--	--	--	--	1400	15100	92
20...	1.4	.68	.190	.020	15	--	--	221	472	96
SEP 17...	.56	.56	.030	.020	5.7	--	--	116	3.4	98

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)
OCT 17...	1122	4	0	4	200	0	200	0	0	<1	0
DEC 18...	1320	--	--	--	--	--	--	--	--	--	--
JAN 24...	1527	3	1	2	100	0	100	0	0	0	0
MAR 25...	1224	--	--	--	--	--	--	--	--	--	--
APR 23...	0930	4	1	3	300	200	100	1	--	<1	0
JUN 24...	1100	--	--	--	--	--	--	--	--	--	--
JUL 22...	1205	4	0	4	100	0	100	0	--	<1	10
SEP 17...	1220	--	--	--	--	--	--	--	--	--	--

08475000 RIO GRANDE NEAR BROWNSVILLE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)
OCT 17...	0	0	2	0	<3	3	3	0	570	560	<10
DEC 18...	--	--	--	--	--	--	--	--	--	--	--
JAN 24...	0	0	2	2	0	8	8	0	630	610	20
MAR 25...	--	--	--	--	--	--	--	--	--	--	--
APR 23...	0	0	0	--	<3	0	0	1	860	--	<10
JUN 24...	--	--	--	--	--	--	--	--	--	--	--
JUL 22...	10	0	0	--	<3	4	4	0	550	--	<10
SEP 17...	--	--	--	--	--	--	--	--	--	--	--

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI)
OCT 17...	3	3	0	170	140	30	.1	.1	.0	5	5
DEC 18...	--	--	--	--	--	--	--	--	--	--	--
JAN 24...	5	5	0	170	160	6	.1	.0	.3	2	1
MAR 25...	--	--	--	--	--	--	--	--	--	--	--
APR 23...	5	5	0	220	220	5	.8	.7	.1	2	2
JUN 24...	--	--	--	--	--	--	--	--	--	--	--
JUL 22...	4	1	3	80	80	2	.2	.1	.1	2	2
SEP 17...	--	--	--	--	--	--	--	--	--	--	--

DATE	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 17...	0	0	0	0	0	0	0	0	0	5
DEC 18...	--	--	--	--	0	--	--	--	--	--
JAN 24...	1	0	0	0	0	0	0	30	20	7
MAR 25...	--	--	--	--	0	--	--	--	--	--
APR 23...	0	0	0	0	0	0	0	10	--	<3
JUN 24...	--	--	--	--	0	--	--	--	--	--
JUL 22...	0	1	0	1	0	0	0	20	--	<3
SEP 17...	--	--	--	--	0	--	--	--	--	--

DATE	TIME	PCB TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)
NOV 14...	1200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
NOV 14...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

08475000 RIO GRANDE NEAR BROWNSVILLE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LENGTH OF EXPO-SURE (DAYS)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS)
JAN						
24...	37	4.25	4.41	8.12	.410	19.7
MAY						
28...	35	9.13	10.2	18.6	8.72	57.5

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE TIME	NOV 14,79 1200	MAR 25,80 1224	MAY 28,80 1305	JUN 24,80 1100
TOTAL CELLS/ML	97000	140000	42000	530000
DIVERSITY: DIVISION	1.1	0.9	1.2	0.1
.CLASS	1.1	1.0	1.2	0.1
..ORDER	1.5	1.3	1.8	0.5
...FAMILY	1.8	1.5	2.1	0.5
....GENUS	0.0	1.8	2.8	1.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	--	-
...CHLOROCOCCACEAE	510	1	--	-	--	-	--	-
...COELASTRACEAE								
....COELASTRUM	--	-	--	-	--	-	--	-
...MICRACTINIACEAE								
....GOLENKINIA	--	-	*	0	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	*	0	3800	3	210	1	*	0
....CHLORELLA	--	-	5700	4	*	0	--	-
....CHODATELLA	--	-	--	-	*	0	*	0
....DICTYOSPHAERIUM	5800	6	2400	2	3100	8	--	-
....GLOEOACTINIUM	--	-	--	-	570	1	--	-
....KIRCHNERIELLA	1200	1	3600	3	--	-	*	0
....OOCYSTIS	3400	4	--	-	430	1	*	0
....SELENASTRUM	--	-	--	-	*	0	--	-
....TETRAEDRON	*	0	*	0	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....CRUCIGENIA	--	-	810	1	570	1	*	0
....SCENEDESMUS	5300	5	5900	4	5700	14	*	0
....TETRASTRUM	680	1	--	-	290	1	--	-
..TETRASPORALES								
...PALMELLACEAE								
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-
..ULOTRICHALES								
...ULOTRICHACEAE								
....GEMINELLA	--	-	5700	4	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	--	-	290	1	--	-
....CHLOROGONIUM	--	-	--	-	--	-	*	0
..ZYGNEMATALES								
...DESMIDIACEAE								
....EUASTRUM	*	0	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....COSCINODISCUS	*	0	--	-	--	-	--	-
....CYCLOTELLA	*	0	*	0	1200	3	*	0
....MELOSIRA	--	-	--	-	*	0	*	0
..PENNALES								
...ACHNANTHACEAE								
....COCCONEIS	--	-	--	-	*	0	--	-
...FRAGILARIACEAE								
....SYNEDRA	--	-	2000	1	--	-	--	-
...NAVICULACEAE	*	0	--	-	--	-	--	-
....NAVICULA	1400	1	1800	1	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	3100	3	*	0	1100	3	*	0
...SURIRELLACEAE								
....SURIRELLA	680	1	--	-	--	-	--	-
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...MALLOMONADACEAE								
....MALLOMONAS	--	-	*	0	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	*	0	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	*	0	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08475000 RIO GRANDE NEAR BROWNSVILLE, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980--Continued

DATE	NOV 14,79		MAR 25,80		MAY 28,80		JUN 24,80	
TIME	1200		1224		1305		1100	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	39000#	40	100000#	72	19000#	46	37000	7
....ANACYSTIS	25000#	26	--	-	640	2	4300	1
....GOMPHOSPHAERIA	--	-	--	-	2100	5	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	1100	3	--	-
....ANABAENOPSIS	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE								
....LYNGBYA	6800	7	--	-	--	-	43000	8
....OSCILLATORIA	--	-	2200	2	4300	10	440000#	83
....PHORMIDIUM	1700	2	--	-	--	-	--	-
....SCHIZOTHRIX	--	-	2400	2	--	-	--	-
...RIVULARIACEAE								
....RAPHIDIOPSIS	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	*	0	--	-
....PHACUS	510	1	--	-	--	-	--	-
....TRACHELOMONAS	*	0	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	--	-	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
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PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	JUL 22,80		AUG 20,80		SEP 17,80	
TIME	1205		1057		1220	
TOTAL CELLS/ML	300000		16000		390000	
DIVERSITY: DIVISION	0.1		1.4		0.2	
.CLASS	0.1		1.4		0.2	
..ORDER	0.5		2.1		0.5	
...FAMILY	0.5		3.0		0.7	
....GENUS	0.7		3.1		0.7	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHARACIACEAE						
....SCHROEDERIA	--	-	--	-	*	0
...CHLOROCOCCACEAE	--	-	--	-	--	-
...COELASTRACEAE						
....COELASTRUM	--	-	940	6	--	-
...MICRACTINIACEAE						
....GOLENKINIA	--	-	*	0	--	-
....MICRACTINIUM	--	-	1500	10	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	*	0	130	1	*	0
....CHLORELLA	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	130	1	*	0
....GLOEOACTINIUM	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-
....OOCYSTIS	--	-	500	3	--	-
....SELENASTRUM	*	0	*	0	--	-
....TETRAEDRON	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	*	0
...SCENEDESMACEAE						
....CRUCIGENIA	--	-	130	1	--	-
....SCENEDESMUS	*	0	940	6	2300	1
....TETRASTRUM	--	-	130	1	*	0
..TETRASPORALES						
...PALMELLACEAE						
....SPHAEROCYSTIS	--	-	270	2	--	-
..ULOTRICHALES						
...ULOTRICHACEAE						
....GEMINELLA	--	-	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	130	1	--	-
....CHLOROGONIUM	--	-	--	-	--	-
..ZYGNEMATALES						
...DESMIDIACEAE						
....EUASTRUM	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
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08475000 RIO GRANDE NEAR BROWNSVILLE, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980--Continued

DATE	JUL 22,80		AUG 20,80		SEP 17,80	
TIME	1205		1057		1220	
TOTAL CELLS/ML	300000		16000		390000	
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....COSCINODISCUS						
....CYCLOTELLA	--	-	*	0	--	-
....MELOSIRA	*	0	470	3	*	0
..PENNALES	--	-	--	-	--	-
...ACHNANTHACEAE						
....COCCONEIS						
...FRAGILARIACEAE	--	-	340	2	3500	1
....SYNEDRA						
...NAVICULACEAE	*	0	--	-	*	0
....NAVICULA	--	-	--	-	--	-
...NITZSCHIACEAE	*	0	--	-	--	-
....NITZSCHIA						
...SURIRELLACEAE	*	0	1400	9	--	-
....SURIRELLA						
.CHRYSOPHYCEAE	--	-	--	-	--	-
..CHRYSOMONADALES						
...MALLOMONADACEAE						
....MALLOMONAS						
	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOCHRYSIDACEAE						
....CHROOMONAS						
...CRYPTOMONADACEAE	--	-	--	-	--	-
....CRYPTOMONAS						
	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....AGMENELLUM						
....ANACYSTIS	--	-	1900	12	12000	3
....GOMPHOSPHAERIA	23000	8	--	-	9600	2
..HORMOGONALES	--	-	--	-	--	-
...NOSTOCACEAE						
....ANABAENA						
....ANABAENOPSIS	--	-	--	-	--	-
...OSCILLATORIACEAE	--	-	--	-	6100	2
....LYNGBYA						
....OSCILLATORIA	--	-	--	-	--	-
....PHORMIDIUM	270000#	89	5900#	37	350000#	90
....SCHIZOTHRIX	7400	2	--	-	--	-
...RIVULARIACEAE	--	-	--	-	--	-
....RAPHIDIOPSIS						
	--	-	810	5	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA						
....PHACUS	*	0	*	0	--	-
....TRACHELOMONAS	--	-	--	-	--	-
	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)						
.DINOPHYCEAE						
..PERIDINIALES						
...GLENODINIACEAE						
....GLENODINIUM						
	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08475000 RIO GRANDE NEAR BROWNSVILLE, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1979 TO SEPTEMBER 1980

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1979	6150	1690	1050	17400	250	4100	320	5390	430
NOV.	1979	12481	1660	1030	34700	240	8150	320	10800	420
DEC.	1979	13690	2080	1290	47700	330	12200	390	14300	520
JAN.	1980	4598	1690	1040	13000	250	3050	320	4020	430
FEB.	1980	7593	1380	851	17400	190	3830	270	5550	360
MAR.	1980	7795	1570	970	20400	220	4680	300	6390	400
APR.	1980	3298.8	1310	811	7220	180	1570	260	2310	340
MAY	1980	20304.5	1280	793	43500	170	9360	250	13900	330
JUNE	1980	4859	1390	859	11300	190	2490	270	3580	360
JULY	1980	8697	1270	782	18400	170	3940	250	5900	330
AUG.	1980	40650	1130	701	76900	150	16200	230	24900	300
SEPT	1980	8175.2	1470	908	20000	210	4540	290	6310	380
TOTAL		138291.0	**	**	328000	**	74100	**	103000	**
WTD. AVG.		378	1420	878	**	200	**	280	**	370

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1610	1330	1540	1950	1370	1420	1360	1170	1530	1240	1490	1220
2	1660	1380	1550	1920	1360	1500	1340	1200	1550	1270	1370	1330
3	1880	1410	1560	1730	1350	1550	1360	1220	1580	1270	1320	1980
4	1890	1400	1580	1750	1350	1600	1430	1240	1630	1290	1360	1710
5	1670	1390	1600	1720	1370	1700	1400	1380	1650	1270	1440	1800
6	1990	1970	1560	1720	1420	1650	1290	1310	1680	1290	1420	1760
7	1800	1800	1740	1730	1420	1600	1320	1190	1680	1260	1420	1760
8	1700	1740	2340	1680	1430	1550	1280	1180	1750	1220	1320	1780
9	1710	1580	2330	1670	1430	1530	1340	1180	1810	1230	1200	1760
10	1600	1600	2320	1670	1440	1510	1380	1190	1410	1220	1150	1820
11	1550	1580	1750	1690	1450	1530	1410	1200	1300	1210	1120	1800
12	1500	1550	2290	1660	1440	1520	1480	1200	1280	1250	1080	1830
13	1810	1880	1570	1680	1420	1510	1460	1200	1320	1270	1220	1830
14	1750	1710	1530	1690	1350	1500	1520	1210	1350	1320	1090	1860
15	1720	2040	2350	1670	1360	1510	1430	1220	1360	1310	790	1810
16	1910	1950	2330	1680	1380	1500	1480	1240	1380	1290	892	1780
17	1800	2020	2340	1630	1370	1480	1480	1250	1390	1340	1580	1850
18	1870	1700	2360	1720	1370	1490	1570	1260	1310	1290	1660	1960
19	1880	1500	2370	1810	1380	1500	1500	1250	1270	1310	1380	2020
20	1760	1480	2280	1750	1370	1480	1620	1240	1270	1300	1010	1930
21	1780	1580	1730	1700	1360	1460	1640	1240	1320	1320	859	1840
22	1790	1590	2010	1690	1370	1470	1700	1280	1340	1310	848	1700
23	1740	1500	2100	1620	1360	1470	1590	1290	1320	1340	867	1640
24	1780	1580	2230	1450	1340	1480	1490	1300	1320	1360	930	1680
25	1630	1600	2200	1500	1300	1470	1270	1310	1290	1360	959	1400
26	1470	1650	2180	1430	1300	1430	1190	1350	1300	1260	1000	1320
27	1460	1600	2160	1490	1360	1490	1180	1400	1300	1210	1060	1260
28	1450	1580	2250	1400	1370	1500	1180	1440	1290	1180	1100	1290
29	1470	1560	2140	1410	1400	1510	1170	1500	1280	1180	1140	1240
30	1400	1550	2000	1390	---	1460	1190	1510	1240	1210	1230	1250
31	1310	---	1970	1400	---	1440	---	1520	---	1340	1280	---
MEAN	1690	1630	2010	1650	1380	1510	1400	1280	1420	1270	1180	1670

08475000 RIO GRANDE NEAR BROWNSVILLE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.5	24.0	---	---	14.5	---	23.0	27.0	---	29.0	29.5	30.0
2	27.5	24.0	---	19.5	14.5	---	24.5	28.0	---	29.0	29.0	29.5
3	27.0	24.0	20.0	19.5	---	---	26.0	---	---	29.5	29.0	29.0
4	27.0	---	20.0	19.5	14.5	---	26.0	27.0	---	29.5	28.0	29.0
5	27.0	23.5	20.0	20.0	---	---	24.5	28.0	---	29.0	30.0	29.0
6	27.0	23.0	20.0	---	---	---	23.0	27.0	28.0	30.5	29.0	28.5
7	---	23.0	19.0	20.0	---	---	25.5	25.0	28.0	30.0	28.0	30.0
8	26.5	22.5	19.0	21.0	---	---	23.0	26.0	---	30.0	27.5	30.0
9	27.0	22.0	---	21.0	---	---	---	27.0	29.5	32.0	---	29.5
10	27.0	22.0	19.0	20.0	---	---	---	---	28.0	31.5	---	29.5
11	27.0	---	19.0	19.5	---	---	27.0	26.5	29.0	30.0	28.0	29.0
12	26.5	22.0	19.0	19.5	---	---	3.0	28.0	---	30.0	29.5	29.0
13	26.5	22.0	19.0	---	---	---	1.0	29.0	28.0	30.5	29.0	29.0
14	---	22.0	19.0	20.5	---	---	22.5	29.0	29.0	30.5	30.0	31.0
15	27.0	22.0	18.5	20.0	---	---	25.0	---	29.5	29.5	30.0	29.0
16	27.0	22.0	---	20.0	---	---	24.0	31.0	29.0	29.5	30.5	29.0
17	26.5	21.5	18.5	20.0	---	---	25.0	29.0	29.5	29.0	31.0	28.0
18	26.5	22.0	18.0	21.0	---	---	27.5	31.0	30.0	29.5	30.5	28.5
19	26.5	21.5	18.5	19.5	---	---	27.0	29.0	30.0	30.0	31.5	29.5
20	26.5	21.0	18.5	---	---	---	25.0	29.5	30.0	30.0	30.5	28.5
21	---	21.0	19.0	18.0	---	---	25.5	29.5	30.0	30.0	29.5	30.0
22	26.0	21.0	19.0	18.0	---	---	23.0	28.0	30.0	30.5	30.0	28.5
23	26.5	20.0	---	18.0	---	---	24.0	---	30.0	29.5	30.0	28.0
24	26.5	20.0	19.0	17.5	---	---	25.5	---	30.0	29.0	31.5	29.0
25	25.0	---	---	17.5	---	22.5	27.0	---	30.0	30.0	30.5	28.5
26	24.5	---	---	17.0	---	22.0	26.0	---	30.0	32.0	30.0	28.5
27	24.5	---	19.0	16.0	---	22.5	26.0	---	29.5	32.5	29.5	28.0
28	---	---	19.0	15.0	---	---	25.0	---	29.0	32.0	30.0	29.0
29	24.5	---	19.0	14.5	---	23.0	24.5	---	29.0	30.0	30.0	30.0
30	24.0	---	---	14.0	---	24.0	24.0	---	29.0	29.5	29.0	30.0
31	24.0	---	19.5	14.5	---	25.0	---	---	---	29.5	28.0	---
MEAN	26.5	22.0	19.0	18.5	14.5	23.0	25.0	28.0	29.5	30.0	29.5	29.0

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	450	108	131	168	170	77	111	25	7.5
2	426	94	108	144	116	45	103	20	5.6
3	364	388	381	168	103	47	158	19	8.1
4	261	494	348	454	100	123	203	21	12
5	209	125	71	803	110	238	269	24	17
6	182	496	244	982	86	228	396	19	20
7	169	200	91	907	64	157	468	33	42
8	157	112	47	692	84	157	462	44	55
9	152	94	39	631	91	155	334	50	45
10	144	49	19	770	96	200	358	53	51
11	144	53	21	911	110	271	462	71	89
12	219	54	32	1030	108	300	537	43	62
13	167	106	48	973	322	846	464	19	24
14	139	100	38	628	250	424	482	20	26
15	118	115	37	364	200	197	479	40	52
16	134	104	38	237	98	63	468	45	57
17	242	90	59	184	194	96	498	49	66
18	122	84	28	175	200	94	485	54	71
19	66	88	16	253	75	51	328	34	30
20	83	106	24	296	85	68	220	53	31
21	105	100	28	200	57	31	174	49	23
22	172	115	53	204	36	20	137	65	24
23	242	116	76	171	39	18	136	60	22
24	412	190	211	164	31	14	279	62	47
25	279	160	121	178	30	14	497	60	81
26	255	141	97	186	29	15	1030	60	167
27	212	154	88	186	26	13	1260	60	204
28	153	150	62	163	28	12	1050	56	159
29	127	140	48	153	27	11	826	70	156
30	103	176	49	106	26	7.4	632	70	119
31	142	166	64	---	---	---	384	65	67
TOTAL	6150	---	2717	12481	---	3992.4	13690	---	1840.2

08475000 RIO GRANDE NEAR BROWNSVILLE, TX--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	266	70	50	89	168	40	101	60	16
2	283	71	54	85	122	28	333	150	135
3	252	43	29	92	104	26	516	252	351
4	187	50	25	237	97	62	741	325	650
5	173	40	19	209	92	52	1100	316	939
6	200	40	22	239	88	57	971	200	524
7	244	38	25	418	85	96	714	195	376
8	296	66	53	410	80	89	464	150	188
9	222	66	40	310	75	63	260	126	88
10	156	47	20	190	70	36	146	108	43
11	119	36	12	200	65	35	114	95	29
12	100	48	13	160	60	26	92	88	22
13	86	60	14	200	63	34	52	54	7.6
14	84	76	17	392	50	53	68	33	6.1
15	118	76	24	332	52	47	72	65	13
16	124	60	20	301	48	39	75	76	15
17	119	144	46	352	40	38	116	88	28
18	156	92	39	304	45	37	111	68	20
19	124	86	29	302	50	41	81	55	12
20	112	93	28	332	58	52	101	43	12
21	120	117	38	245	50	33	174	36	17
22	166	98	44	193	48	25	179	50	24
23	186	100	50	222	40	24	181	55	27
24	124	94	31	348	30	28	188	53	27
25	76	100	21	418	62	70	168	62	28
26	75	106	21	434	65	76	116	70	22
27	71	148	28	283	60	46	104	84	24
28	54	95	14	181	58	28	98	80	21
29	63	90	15	115	65	20	84	76	17
30	138	116	43	---	---	---	112	66	20
31	104	56	16	---	---	---	163	75	33
TOTAL	4598	---	900	7593	---	1301	7795	---	3734.7

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	246	64	43	128	88	30	225	92	56
2	202	60	33	68	72	13	139	101	38
3	118	74	24	37	75	7.5	82	76	17
4	101	84	23	20	70	3.8	42	54	6.1
5	232	64	40	9.5	97	2.5	31	66	5.5
6	287	48	37	236	70	45	29	54	4.2
7	237	60	38	512	90	124	32	74	6.4
8	100	54	15	851	150	345	36	75	7.3
9	49	60	7.9	579	150	234	308	508	609
10	34	74	6.8	374	95	96	731	276	605
11	33	93	8.3	231	76	47	274	57	42
12	58	57	8.9	270	78	57	86	37	8.6
13	74	73	15	438	87	103	57	30	4.6
14	86	72	17	526	74	105	89	33	7.9
15	59	57	9.1	456	72	89	59	26	4.1
16	31	65	5.4	259	68	48	44	37	4.4
17	17	70	3.2	274	72	53	169	35	16
18	7.8	82	1.7	219	67	40	202	35	19
19	6.0	80	1.3	213	58	33	165	34	15
20	9.5	94	2.4	770	245	754	139	38	14
21	8.5	86	2.0	2220	1360	8170	159	35	15
22	12	94	3.0	2670	950	6850	179	34	16
23	21	179	10	2240	650	3930	195	33	17
24	57	132	20	1740	375	1760	228	35	22
25	205	124	69	1510	188	766	250	37	25
26	191	71	37	1250	108	364	205	31	17
27	113	76	23	752	93	189	183	42	21
28	107	70	20	576	100	156	173	38	18
29	297	82	66	417	85	96	155	34	14
30	300	96	78	213	80	46	193	58	30
31	---	---	---	246	76	50	---	---	---
TOTAL	3298.8	---	668.0	20304.5	---	24606.8	4859	---	1685.1

08475000 RIO GRANDE NEAR BROWNSVILLE, TX--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	176	44	21	67	39	7.1	784	116	246
2	192	36	19	54	41	6.0	982	120	318
3	150	27	11	57	40	6.2	657	87	154
4	125	30	10	75	42	8.5	385	34	35
5	165	56	25	448	72	87	238	28	18
6	190	42	22	456	58	71	194	36	19
7	243	39	26	260	48	34	186	44	22
8	519	66	92	290	54	42	188	38	19
9	590	84	134	770	650	1350	130	62	22
10	452	64	78	2170	900	5270	89	42	10
11	302	48	39	3640	1910	18800	56	72	13
12	170	41	19	4200	1230	13900	57	46	7.1
13	145	46	18	4270	1160	13400	68	83	15
14	267	50	36	4030	1210	13200	83	72	16
15	261	49	35	4060	978	10700	72	72	14
16	203	44	24	4340	894	10500	35	71	6.7
17	243	52	34	3330	791	7110	15	84	3.4
18	217	52	30	1800	574	2790	4.2	74	.84
19	178	36	17	1140	345	1060	17	60	2.8
20	132	37	13	812	218	478	36	94	9.1
21	100	46	12	562	121	184	65	59	10
22	54	34	5.0	438	63	75	77	74	15
23	86	35	8.1	388	48	50	97	92	24
24	187	47	24	327	34	30	174	46	22
25	756	449	1190	388	34	36	178	39	19
26	1150	356	1110	643	66	115	285	49	38
27	696	163	318	456	38	47	403	43	47
28	427	74	85	367	35	35	600	47	76
29	148	50	20	296	32	26	1010	121	330
30	81	38	8.3	236	34	22	1000	149	402
31	92	42	10	280	84	64	---	---	---
TOTAL	8697	---	3493.4	40650	---	99503.8	8175.2	---	1933.94

Verde Creek Low-Flow Investigation

PURPOSE.--To determine the changes in quantity of low flow in Verde Creek and its tributaries as it crosses the Edwards Underground aquifer recharge zone.

REACH.--The investigation began on Middle Verde Creek about 700 ft upstream from State Highway 173 crossing, about 15.6 miles north of Hondo, and ended on Verde Creek at State Highway 173 crossing at Vanderburg Community, about 4.5 miles north of Hondo. The investigation involved a distrance of 16.5 miles along the Verde and Middle Verde Rivers.

REVIOUS INVESTIGATIONS.--None made previously in this reach.

SUMMARY.--Streamflow during this investigation was a result of heavy rains that occurred on Sept. 6, 7. The investigation was made at a time when there was combined flow of about 60 ft^3/s on Middle Verde and East Verde Creeks. Because a steady state condition did not exist at the upper sites to determine losses to the Edwards Underground aquifer, the data should be used with caution.

Location and description of data-collection sites, Verde Creek and tributaries

Stream	Location	Date	Miles above mouth	Water temp. (°C)	Discharge in cfs Main stream	Discharge in cfs tributary	Remarks
Middle Verde Creek	Lat 29°34'08", long 99°05'55", 700 ft upstream from bridge on State Highway 173, 15.6 mi north of Hondo.	Sept. 8	24.0	24.0	71.2		Streambed is rock with some gravel.
........Do........	Lat 29°32'17", long 99°04'47", 200 ft upstream from county road crossing, 800 ft upstream from East Verde Creek, 13.7 mi north of Hondo.	Sept. 8	20.3	24.0	46.9		Streambed is gravel.
........Do........	Lat 29°34'41", long 99°04'48", at county road crossing, 16.0 mi north of Hondo.	Sept. 8		24.0		16.4	...........Do............
Middle Verde Creek	Lat 29°31'17", long 99°05'04", at county road crossing, 12.7 mi north of Hondo.	Sept. 8	18.9		*30		Ponded upstream and downstream from crossing; only field estimated made.
........Do........	Lat 29°30'11", long 99°06'02", 40 ft downstream from Middle Verde recharge reservoir, 11.1 mi north of Hondo.	Sept. 8	16.6	24.0	9.02		All water is being discharged through drop inlet of reserovir which was submerged. Streambed is silty, gravel with large pool downstream.
........Do........	Lat 29°30'05", long 99°06'31", 30 ft downstream from bridge on State Highway 173, 10.9 mi north of Hondo.	Sept. 8	15.9	27.0	8.63		Streambed is gravel.
........Do........	Lat 29°29'01", long 99°07'18", 200 ft downstream from county road crossing, 9.7 mi north of Hondo.	Sept. 8	14.0	27.0	3.70		Streambed is slab rock and gravel.
Martin Creek	Lat 29°30'26", long 99°07'52", at county road crossing, 11.2 mi north of Hondo.	Sept. 8				0	Streambed is rock and gravel.
........Do........	Lat 29°29'00", long 99°07'37", 1,800 ft upstream from mouth, 9.2 mi north of Hondo.	Sept. 8				0	...........Do............
Verde Creek	Lat 29°27'00", long 99°07'30", at Seifert Ranch, 7.2 mi north of Hondo.	Sept. 8	11.0		*.05		Stream is gravel; seepage through gravel.
........Do........	Lat 29°24'16", long 99°06'59", 100 ft downstream from bridge on State Highway 173, 4.5 mi north of Hondo.	Sept. 8	7.5	25.0	1.16		Stream is gravel with some seepage through gravel.

* Estimated.

NUECES RIVER BASIN

Frio River Low-Flow Investigation

PURPOSE.--To determine the changes in quantity of low flow in the Frio River and its tributaries where it crosses the Edwards Underground aquifer recharge zone.

REACH.--The investigation began at the stream-gaging station Frio River at Concan (08195000) and ended at the stream-gaging station Frio River below Dry Frio River near Uvalde (08197500). This involved a distance along the Frio River of 28.4 miles.

PREVIOUS INVESTIGATIONS.--1932.

SUMMARY.--Streamflow during this investigation was a result of heavy rains that occurred on Sept. 6, 7. Constant flow was found at the upstream site, but as indicated by the two measurements made at the U.S. Highway 90 bridge, a steady state condition had not been reached at the downstream site. Therefore, the losses to the Edwards Underground aquifer in some sections of the lower reach should be used with caution.

Location and description of data-collection sites, Frio Creek and tributaries

Stream	Location	Date	Miles above mouth	Water temp. (°C)	Discharge in cfs Main stream	Discharge in cfs tributary	Remarks
Frio River	Lat 29°29'18", long 99°42'16", at stream-gaging station 08195000.	Sept. 11	28.4	24.5	201		Streambed is gravel.
....Do....	Lat 29°26'47", long 99°39'55", 300 ft upstream from crossing on FM 2690, 10.8 mi north of Knippa.	Sept. 11	22.8	26.5	160		Streambed is rock outcrop and gravel.
....Do....	Lat 29°23'23", long 99°38'57", at Sidel Ranch, 6.6 mi north of Knippa.	Sept. 11	16.7	28.0	93.7		Streambed is rock outcrop.
....Do....	Lat 29°21'03", long 99°39'32", at county road extension, 4.2 mi north of Knippa.	Sept. 11	13.8	30.0	72.7		Streambed is gravel.
....Do....	Lat 29°19'46", long 99°39'14", 200 ft downstream from Helbig Crossing, 2.7 mi north of Knippa.	Sept. 11	11.6	29.5	42.8		...........Do...........
....Do....	Lat 29°17'30", long 99°38'54", 50 ft downstream from bridge on U.S. Highway 90, 0.8 mi west of Knippa at discontinued partial-record site 08195500.	Sept. 11	6.2	26.0 29.0	[1] 10.6 [2] 3.58		...........Do...........
....Do....	Lat 29°14'44", long 99°40'27", at stream-gaging station 08197500.	Sept. 11	0	31.0	.86		...........Do...........

[1] At 0930 hours.
[2] At 1625 hours.

Because the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than continuous stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage of those events. The data collected for special reasons are called measurements at miscellaneous sites.

Streamflow data collected at partial-record stations where water-quality data other than observations of water temperature are not obtained are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations; the second is a table of annual maximum stage and (or) discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low and high flows are given in a third table. Discharge measurements and water-quality data collected at partial-record stations are presented in downstream order in the section of this report entitled "Gaging-station records."

Low-flow partial-record stations

Measurements of streamflow at low-flow partial-record stations that are not published in the gaging-station section are given in the following table. Most of the measurements of low flow were made during periods when streamflow was sustained primarily by ground-water discharge. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will indicate the low-flow potential of the stream. The years listed in the column headed "Period of record" identifies the water years in which measurements were made at the same or at practically the same site.

Discharge measurements made at low-flow partial-record stations during water year 1980

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (ft³/s)
		Colorado River basin				
08129500	Dove Creek Spring near Knickerbocker, Tex.	Lat 31°11'06", long 100°43'51", Irion County, at headquarters ranchhouse, 500 ft upstream from Dove Creek, 1.8 mi upstream from Stilson Dam on Dove Creek, and 8.5 mi southwest of Knickerbocker.	(a)	1944-58*, 1959-80	10- 2-79	16.6
					11-14-79	14.6
					1- 3-80	12.6
					2-14-80	13.1
					3-31-80	13.3
					5- 6-80	13.3
					6-17-80	13.4
					7-28-80	10.6
					9-15-80	11.4
08131300	South Concho River above Pecan Creek near San Angelo, Tex.	Lat 31°20'13", long 100°28'46", Tom Green County, 1,000 ft upstream from Pecan Creek and about 9 mi south of San Angelo.	(a)	1963-80	10- 1-79	2.94
					11-13-79	3.15
					1- 2-80	2.97
					2-13-80	3.24
					3-28-80	3.10
					5- 6-80	3.00
					6-16-80	2.66
					7-28-80	2.13
08143900	Springs at Fort McKavett, Tex.	Lat 30°50'03", long 100°05'37", Menard County, at Fort McKavett.	(a)	1902, 1905, 1922, 1942, 1948-49, 1951-52, 1955-56, 1958-80	2-22-80	24.7
					6-26-80	21.4
08146500	San Saba Springs, at San Saba, Tex.	Lat 31°11'44", long 98°42'42", San Saba County, 150 ft upstream from bridge on U.S. Highway 190 at San Saba and 0.8 mi east of courthouse.	(a)	1939, 1952, 1957, 1959-80	1- 8-80	7.16
					6-24-80	10.5
08149400	South Llano River near Telegraph, Tex.	Lat 30°15'43", long 99°56'01", Edwards County, 3.7 mi upstream from Paint Creek, 5.7 mi south of Telegraph, and 18.7 mi southwest of Junction.	(a)	1939, 1952, 1956, 1959-80	2-21-80	16.7
					8- 8-80	4.24
08149500	Seven Hundred Springs near Telegraph, Tex.	Lat 30°16'12", long 99°55'22", Edwards County, about 3 mi upstream from Paint Creek, about 5 mi south of Telegraph, and about 18 mi southwest of Junction.	(a)	1939, 1952, 1955-56, 1959-80	2-21-80	8.4
					8- 8-80	19.3
08153050	Pedernales River near Stonewall, Tex.	Lat 30°14'35", long 98°39'25", Gillespie County, at downstream side of Ranch Road 1623 at Stonewall, 0.6 mi upstream from Salt Branch, and at mile 68.9.	-	1979-80	10-24-79	31
					5-20-80	123
					7- 2-80	10.9
					8- 6-80	4.4
					9-23-80	15
08155400	Barton Creek above Barton Springs at Austin, Tex.	Lat 30°15'48", long 97°46'19", Travis County, just upstream from upper dam of Barton Creek swimming pool in Zilker Park and upstream from all springs known as Barton Springs at Austin.	125	1919-80	11- 5-79	.36
					1-16-80	0
					7- 3-80	0
					7-31-80	0

* Operated as a continuous-record station.

a Not applicable.

Discharge measurements made at low-flow partial-record stations during water year 1980--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (ft³/s)
		Guadalupe River basin				
08168000	Hueco Srpings near New Braunfels, Tex.	Lat 29°45'33", long 98°08'23", Comal County, two springs located 400 and 500 ft west of the Guadalupe River, 600 ft downstream from the mouth of Elm Creek, and 4.2 mi north of New Braunfels.	(a)	1944-80	10- 2-79 11-14-79 12-21-79 2- 4-80 3-24-80 4-28-80 6- 9-80 7-18-80 8-29-80	62 41 29 21 14 15 27 16 14
08168600	Blieders Creek at New Braunfels, Tex.	Lat 29°43'14", long 98°07'23", Comal County, at Grove Avenue crossing in northwest New Braunfels and 0.25 mi upstream from mouth.	-	1962-80	1- 3-80 7-17-80	0 0
08168700	Panther Canyon at New Braunfels, Tex.	Lat 29°42'47", long 98°08'14", Comal County, at Landa Park Drive crossing in Landa Park at New Braunfels.	-	1962-80	1- 3-80 7-17-80	0 0
08168800	Dry Comal Creek at New Braunfels, Tex.	Lat 29°41'52", long 98°08'11", Comal County, at Floral Avenue crossing in New Braunfels, 0.6 mi upstream from Missouri Pacific Railroad Co. bridge, and 0.9 mi upstream from mouth.	-	1962-80	1- 3-80 7-17-80	1.4 .13
		Nueces River basin				
08204000	Leona River spring flow near Uvalde, Tex.	Lat 29°09'15", long 99°44'35", Uvalde County, at old road crossing on White's Ranch, 2.0 mi downstream from Cooks Slough, and 4.7 mi southeast of Uvalde.	(a)	1935-65*, 1966-80	10-18-79 11-29-79 1-10-80 2-22-80 4- 3-80 5-14-80 7- 3-80 8- 7-80 9-17-80	34 38 44 18 18 13 3.7 1.5 9.6
		Rio Grande basin				
08425500	Phantom Lake Spring near Toyahvale, Tex.	Lat 30°56'01", long 103°50'43", Jeff Davis County, 375 ft downstream from source of spring, 3.5 mi southwest of Toyahvale, and 7.0 mi southwest of Balmorhea.	(a)	1931-33*, 1942-66*, 1967-80	10-24-79 12- 5-79 1-15-80 3- 4-80 4-17-80 5-28-80 7-10-80 8-21-80	4.37 4.34 3.05 2.87 2.32 2.42 2.26 1.96
08427000	Giffin Springs at Toyahvale, Tex.	Lat 30°56'51", long 103°47'19", Reeves County, 2,000 ft northwest of post office in Toyahvale.	(a)	1919, 1922-23, 1925, 1932-33*, 1941-80	1-15-80 7-10-80	2.98 3.58
08427500	San Solomon Springs at Toyahvale, Tex.	Lat 30°56'34", long 103°47'16", Reeves County, on South Canal at Toyahvale, 540 ft downstream from headgate at pool of springs, and 4.0 mi southwest of Balmorhea.	(a)	1931-33*, 1941-65*, 1966-80	10-24-79 12- 5-79 1-15-80 3- 4-80 4-17-80 5-28-80 7-10-80 8-21-80	25.9 26.2 32.1 29.9 28.6 28.0 26.5 28.6
08444500	Comanche Springs at Fort Stockton, Tex.	Lat 30°53'20", long 102°51'59", Pecos County, on outlet canal of Pecos County Water Improvement District No. 1 in Fort Stockton, 0.2 mi upstream from bridge on U.S. Highway 290, and 0.5 mi downstream from head of springs.	(a)	1899- 1935, 1936-64*, 1965-80	1-14-80 7-10-80	0 0
08456300 c/	Las Moras Springs at Brackettville, Tex.	Lat 29°18'33", long 100°25'13", Kinney County, in springflow pool at Brackettville, 160 ft south of U.S. Highway 90, and 1,550 ft upstream from bridge on Brackettville-Fort Clark Road.	(a)	1896, 1899- 1900, 1902, 1904-6, 1910, 1912, 1925, 1928, 1951-80	10- 9-79 11-13-79 12-11-79 1- 9-80 2-12-80 3-11-80 4- 8-80 5-13-80 6-10-80 7- 8-80 8-13-80 9- 9-80	9.1 11 10 12 6.7 7.2 3.1 3.1 2.3 .08 7.6 6.7

* Operated as a continuous-record station.
a Not applicable.
c Records were furnished by the International Boundary and Water Commission.

Crest-stage partial-record stations

The following table contains annual maximum stage and (or) discharge at partial-record stations operated primarily for the purpose of defining the flooding characteristics of the streams. At stations where discharge is given, or is footnoted "to be determined", a stage-discharge relation has been, or will be, defined by discharge measurements obtained by current meter or by indirect procedures. Water-stage recorders are located at these flood-hydrograph stations to facilitate complete hydrograph definition. At stations where only the maximum stage is given (discharge column is dashed), data are generally collected for use in stage-frequency studies of flood-profile definition. Gages at these stations usually consist of a device that will register the peak stage occuring between inspections of the gage. The years used in the column "Period of record" identify the years in which the annual maximum has been determined.

Annual maximum stage and (or) discharge during water year 1980

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (ft³/s)
		Colorado River basin					
08142000	Hords Creek at Coleman, Tex.	Lat 31°50'50", long 99°25'25", Coleman County, on right bank in city park, 1,250 ft downstream from bridge on U.S. Highways 84 and 283 and State Highway 206, 1 mi north of courthouse in Coleman, 3.9 mi downstream from Bachelor Creek, 12 mi downstream from Hords Creek Dam, and at mile 14.3.	107	1941-70♦, 1971-80	9-23-71 10-19-71 4-23-73 10-11-73 10-24-74 7- 4-76 5- 8-77 8- 3-78 4-21-79 9-25-80	4.33 4.07 1.53 2.52 10.82 1.26 4.20 7.95 3.78 2.75	b932 b836 b48 b269 b4,190 b20 b884 b2,520 b711 338
08155550	West Bouldin Creek at Riverside Drive, Austin, Tex.	Lat 30°15'49", long 97°45'17", Travis County, on upstream side of eastbound bridge on Riverside Drive in Austin.	3.12	1975-80	3-27-80	2.61	173
08156650	Shoal Creek at Steck Avenue, Austin, Tex.	Lat 30°21'55", long 97°44'11", Travis County, on downstream side of bridge on Steck Avenue in Austin.	3.19	1975-80	5-12-80	3.34	751
08156750	Shoal Creek at White Rock Drive, Austin, Tex.	Lat 30°20'21", long 97°44'50", Travis County, on downstream side of bridge on White Rock Drive in Austin.	7.56	1975-80	5-12-80	9.91	1,400
08158100	Walnut Creek at Farm road 1325 near Austin, Tex.	Lat 30°24'35", long 97°42'41", Travis County, on downstream side of bridge on Farm Road 1325 and 9.5 mi north of the State Capitol Building in Austin.	12.6	1975-80	5- 8-80	8.17	843
08158300	Ferguson Branch at Springdale Road, Austin, Tex.	Lat 30°19'53", long 97°39'12", Travis County, on downstream side of bridge on Springdale Road in Austin.	1.63	1975-80	9-25-80	5.05	154
08158400	Little Walnut Creek at Interstate Highway 35, Austin, Tex.	Lat 30°20'57", long 97°41'34", Travis County, on downstream frontage road bridge on Interstate Highway 35 in Austin.	5.57	1975-80	5-12-80	5.68	1,780
08158500	Little Walnut Creek at Manor Road, Austin, Tex.	Lat 30°18'34", long 97°40'04", Travis County, on downstream side of bridge on Manor Road in Austin.	12.1	1975-80	3-27-80	6.93	1,520
08158820	Bear Creek at Farm Road 1626 near Manchaca, Tex.	Lat 30°08'25", long 97°50'50", Travis County, on upstream side of culvert on Farm Road 1626 and 1.0 mi west of Manchaca.	24.0	1979-80	5-21-80	6.03	1,300
08158880	Boggy Creek (South) at Circle S Road, Austin, Tex.	Lat 30°10'50", long 97°46'55", Travis County, on downstream side of bridge on Circle S Road in Austin.	3.58	1976-80	5- 8-80	10.05	unknown 1/
08158930	Williamson Creek at Manchaca Road, Austin, Tex.	Lat 30°13'16", long 97°47'36", Travis County, on downstream side of bridge on Manchaca Road in Austin.	19.0	1975-80	5-12-80	6.19	1,000
		Guadalupe River basin					
08169500	Guadalupe River at New Braunfels, Tex.	Lat 29°41'52", long 98°06'23", Comal County, Comal Mills in New Braunfels and 0.4 mi upstream from Interstate Highway 35.	1,652	1898-1902, 1915-27♦, 1974-80	6-21-80	10.93	2,110
08173900	Guadalupe River at Gonzales, Tex.	Lat 29°29'49", long 97°27'17", Gonzales County, at Gonzales Hydro Station in Gonzales and 1.4 mi upstream from U.S. Highway 183.	-	1977-80	9- 8-80	22.20	11,200
08177600	Olmos Creek tributary at Farm Road 1535, Shavano Park, Tex.	Lat 29°34'35", long 98°32'45", Bexar County, at culvert on Farm Road 1535 at Shavano Park and 1.9 mi southeast of intersection of Farm Roads 1535 and 1604.	.33	1968-80	12-28-79	3.09	43
08177900	San Antonio River at Navarro Street, San Antonio, Tex.	Lat 29°25'50", long 98°29'24", Bexar County, at bridge on Navarro Street in San Antonio.	-	1973-80	5-15-80	b640.34	-

♦ Operated as a continuous-record station.
1/ Lost discharge record due to construction in channel.
b Not previously published.
d Elevation, in feet, above National Geodetic Vertical Datum of 1929.

Annual maximum stage and (or) discharge during water year 1980--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (ft³/s)
Guadalupe River basin--Continued							
08177920	San Antonio River at Dolorosa Street, San Antonio, Tex.	Lat 29°25'24", long 98°29'32", Bexar County, just downstream from Dolorosa Street in San Antonio.	-	1980	9- 6-80	de632.06	-
08178100	San Pedro Creek at Santa Rosa Street, San Antonio, Tex.	Lat 29°25'51", long 98°29'49", Bexar County, at bridge on Santa Rosa Street in San Antonio.	-	1973-80	5-15-80	d643.43	-
08178350	Martinez Creek at Fredericksburg Road, San Antonio, Tex.	Lat 29°27'22", long 98°31'04", Bexar County, at bridge on Fredericksburg Road in San Antonio.	-	1973-80	9- 6-80	d681.83	-
08178400	Alazan Creek at West Martin Street, San Antonio, Tex.	Lat 29°25'51", long 98°30'51", Bexar County, at bridge on West Martin Street in San Antonio.	-	1973-80	5-15-80	d636.17	-
08178450	Apache Creek at South Zarzamora Street, San Antonio, Tex.	Lat 29°24'47", long 98°31'42", Bexar County, at bridge on South Zarzamora Street in San Antonio.	-	1973-80	5- 1-80	d628.72	-
08178500	San Pedro Creek at Furnish Street, San Antonio, Tex.	Lat 29°24'22", long 98°30'38", Bexar County, at bridge on Furnish Street in San Antonio.	-	1973-80	5- 1-80	d603.56	-
08178550	San Antonio Rivr at Ashley Street (Berg's Mill), San Antonio, Tex.	Lat 29°20'04", long 98°27'20", Bexar County, at bridge on Ashley Street in San Antonio.	-	1973-80	5- 1-80	d513.90	-
08178555	Harlandale Creek at West Harding Boulevard, San Antonio, Tex.	Lat 29°21'05", long 98°29'32", Bexar County, at mid-channel, 71 ft upstream from West Harding Boulevard and 1.3 mi upstream from Sixmile Creek.	2.43	1977-80	5-13-80	12.28	199
08178690	Salado Creek tributary at Bitters Road, San Antonio, Tex.	Lat 29°31'36", long 98°26'25", Bexar County, at culvert on Bitters Road immediately east of MacArthur High School in San Antonio.	.26	1968-80	12-28-79 5- 1-80 5-15-80 5-18-80 9- 6-80 9- 7-80	4.02 5.22 3.98 4.00 4.40 4.50	52 111 50 51 70 75
08178720	Salado Creek at Rittiman Road, San Antonio, Tex.	Lat 29°29'05", long 98°24'59", Bexar County, at bridge on Rittiman Road in San Antonio.	-	1968-80	9-27-80	d656.50	-
08178740	Salado Creek at East Houston Street, San Antonio, Tex.	Lat 29°25'27", long 98°25'55", Bexar County, at bridge on East Houston Street in San Antonio.	-	1969-80	5-15-80	d599.29	-
08178760	Salado Creek at U.S. Highway 87, San Antonio, Tex.	Lat 29°23'53", long 98°25'35", Bexar County, at bridge on U.S. Highway 87 in San Antonio.	-	1969-80	5-15-80	d578.97	-
08178780	Salado Creek at Southcross Boulevard, San Antonio, Tex.	Lat 29°22'28", long 98°25'32", Bexar County, at bridge on Southcross Boulevard in San Antonio.	-	1969-80	-	<d552.48	-
08181000	Leon Creek tributary at Farm Road 1604, San Antonio, Tex.	Lat 29°35'14", long 98°37'40", Bexar County, 97 ft upstream from culvert on Farm Road 1604 at San Antonio and 1.5 mi west of bridge on Leon Creek.	5.57	1968-80	-	-	(f)
Nueces River basin							
08207220	Rutledge Hollow at 7th Street, Poteet, Tex.	Lat 29°02'07", long 98°34'18", Atascosa County, in city of Poteet at 7th Street and 2.0 mi above Atascosa River.	9.74	1979-80	5-16-80	d422.49	-
08207300	Atascosa River at U.S. Highway 281, Pleasanton, Tex.	Lat 28°57'44", long 98°28'51", Atascosa County, at bridge on U.S. Highway 281 in Pleasanton.	-	1973-80	5-16-80	d349.04	-
San Fernando Creek basin							
08212300	Tranquitas Creek at Kingsville, Tex.	Lat 27°31'33", long 97°52'02", Kleberg County, at bridge on U.S. Highway 77 Business Route in Kingsville, 4.9 mi above San Fernando Creek, and 5.9 mi downstream from Tranquitas Dam.	48.5	1965-80	8-10-80	6.88	-

< Less than.
d Elevation, in feet, above National Geodetic Vertical Datum of 1929.
e For the period April to September.
f No flow during the year.

Measurements of streamflow at points other than gaging stations of partial-record stations are given in the following table:

Discharge measurements made at miscellaneous sites during water year 1980

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
Guadalupe River basin						
San Antonio Springs	San Antonio River	Lat 29°27'56", long 98°28'04", Bexar County, just above Hildebrandt Street in San Antonio, Tex.	-	1951-52, 1959-62, 1972, 1974-77, 1979-80	1- 9-80	51
					6-24-80	0
San Pedro Springs	San Pedro Creek	Lat 29°26'42", long 98°30'06", Bexar County, at San Pedro Park in San Antonio, Tex.	-	1933-35, 1951-52, 1958-61, 1966, 1971, 1974-77, 1979-80	1- 9-80	9.1
					6-24-80	0
Rio Grande basin						
Mud Springs 1/	Mud Creek	Lat 29°27'10", long 100°37'30", Kinney County, on Mays Ranch and about 16 mi northwest of Brackettville, Tex.	-	1939-41, 1952-53, 1962, 1965-80	10- 9-79	13
					11-13-79	12
					12-11-79	10
					1- 9-80	9.2
					2-12-80	6.8
					3-11-80	6.6
					4- 8-80	3.8
					5-13-80	2.8
					6-10-80	2.1
					7- 8-80	1.6
					8-13-80	.97
					9- 9-80	1.7
Pinto Springs 1/	Pinto Creek	Lat 29°24'10", long 100°27'15", Kinney County, on C. C. Belcher Ranch and 7.5 mi northwest of Brackettville, Tex.	-	1939-41, 1952-53, 1965-80	10- 9-79	0
					11-13-79	0
					12-11-79	0
					1- 9-80	0
					2-12-80	0
					3-11-80	0
					4- 8-80	0
					5-13-80	0
					6-10-80	0
					7- 8-80	0
					9 -9-80	0

1/ Measurements by International Boundary and Water Commission.

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October 1, 1978

FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Multiply inch-pound units	By	To obtain SI units
	Length	
inches (in)	2.54×10^{1}	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^{0}	kilometers (km)
	Area	
acres	4.047×10^{3}	square meters (m^2)
	4.047×10^{-1}	square hectometers (hm^2)
	4.047×10^{-3}	square kilometers (km^2)
square miles (mi^2)	2.590×10^{0}	square kilometers (km^2)
	Volume	
gallons (gal)	3.785×10^{0}	liters (L)
	3.785×10^{0}	cubic decimeters (dm^3)
	3.785×10^{-3}	cubic meters (m^3)
million gallons	3.785×10^{3}	cubic meters (m^3)
	3.785×10^{-3}	cubic hectometers (hm^3)
cubic feet (ft^3)	2.832×10^{1}	cubic decimeters (dm^3)
	2.832×10^{-2}	cubic meters (m^3)
cfs-days	2.447×10^{3}	cubic meters (m^3)
	2.447×10^{-3}	cubic hectometers (hm^3)
acre-feet (acre-ft)	1.233×10^{3}	cubic meters (m^3)
	1.233×10^{-3}	cubic hectometers (hm^3)
	1.233×10^{-6}	cubic kilometers (km^3)
	Flow	
cubic feet per second (ft^3/s)	2.832×10^{1}	liters per second (L/s)
	2.832×10^{1}	cubic decimeters per second (dm^3/s)
	2.832×10^{-2}	cubic meters per second (m^3/s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm^3/s)
	6.309×10^{-5}	cubic meters per second (m^3/s)
million gallons per day	4.381×10^{1}	cubic decimeters per second (dm^3/s)
	4.381×10^{-2}	cubic meters per second (m^3/s)
	Mass	
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

* U.S. GOVERNMENT PRINTING OFFICE: 1980-774-[illegible]